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MISCELLANEOUS DOCUMENTS

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HOUSE OF REPRESENTATIVES

FOR THE

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No. 66

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1890

UNITED STATES GEOLOGICAL SURVEY
J. W. POWELL, DIRECTOR

ON

A GROUP OF VOLCANIC ROCKS

FROM THE

TEWAN MOUNTAINS, NEW MEXICO,

AND ON

THE OCCURRENCE OF PRIMARY QUARTZ IN CERTAIN BASALTS

BY

JOSEPH PAXSON IDDINGS

WASHINGTON
GOVERNMENT PRINTING OFFICE
1890

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LETTER OF TRANSMITTAL.

DEPARTMENT OF THE INTERIOR,
UNITED STATES GEOLOGICAL SURVEY,
Washington, D. C., May 24, 1888.

SIR: I have the honor to transmit herewith a paper by Mr. Joseph P. Iddings, "On a group of volcanic rocks from the Tewan Mountains, New Mexico, and on the occurrence of primary quartz in certain basalts."

It is the result of an investigation of a suite of rocks collected by yourself in northwestern New Mexico in the autumn of 1887.

Its special value consists in showing a gradual transition in mineralogical composition from acid to basic lavas and adds one more to the volcanic areas of the Far West which have been investigated by the searching-analytical methods of modern science. Such studies as this of Mr. Iddings will enable us finally to elucidate some of the more important geological problems connected with the crystallization of eruptive rocks.

I recommend that the paper be published as a bulletin of the Geological Survey.

Very respectfully, your obedient servant,

ARNOLD HAGUE,
Geologist.

Hon. J. W. POWELL,
Director U. S. Geological Survey.

ON A GROUP OF VOLCANIC ROCKS FROM THE TEWAN MOUNTAINS, NEW MEXICO, AND ON THE OCCURRENCE OF PRIMARY QUARTZ IN CERTAIN BASALTS.

BY JOSEPH P. IDDINGS.

INTRODUCTION.

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The collection embraces a number of varieties of volcanic rocks and presents a series of transitions from acid rhyolite, through andesite, to quite basic basalt. This series, however, is interrupted in two places by the absence of varieties which occur in neighboring regions and, possibly, may exist in this one in places not yet visited. The greater part of the collection is made up of rhyolite, obsidian, and rhyolitic tufas and ashes, which cover a large area of the country explored. But the small number of andesites and basalts accompanying the rhyolites, by the variations in their mineral composition and physical habit, emphasize the fact that the rocks of the region present a series which grades in composition from one extreme to the other, rather than a number of well-defined types. It is the object of this paper to call attention to the mineralogical relations existing between the rocks of this locality, as another example of that which has been found to exist throughout the series of volcanic rocks occurring in the regions of the Great Basin,[1] including the Washoe district,[2] and of the volcanoes of the Pacific coast,[3] and the Republic of Salvador,[4] Central America; and also to

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[1] Hague and Iddings. Notes on the volcanic rocks of the Great Basin. Am. Jour. Sci., 3d series, vol. 27, 1884, pp. 453–463.

[2] Ibid. Notes on the volcanoes of Northern California, Oregon, and Washington Territory. Am. Jour. Sci., 3d series, vol. 26, 1883, pp. 222–235.

[3] Ibid. On the development of crystallization in the igneous rocks of Washoe, Nevada, with notes on the geology of the district. Bull. U. S. Geol. Survey, No. 17, 1885.

[4] Ibid. Volcanic rocks of the Republic of Salvador, Central America. Am. Jour. Sci., 3d series, vol. 32, 1886, pp. 26–31.

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TO THE DIRECTOR OF THE
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WASHINGTON, D. C.

WASHINGTON, D. C., *June*, 1890.

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No. 66

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1890

UNITED STATES GEOLOGICAL SURVEY

J. W. POWELL, DIRECTOR

ON

A GROUP OF VOLCANIC ROCKS

FROM THE

TEWAN MOUNTAINS, NEW MEXICO,

AND ON

THE OCCURRENCE OF PRIMARY QUARTZ IN CERTAIN BASALTS

BY

JOSEPH PAXSON IDDINGS

WASHINGTON
GOVERNMENT PRINTING OFFICE
1890

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LETTER OF TRANSMITTAL.

DEPARTMENT OF THE INTERIOR,
UNITED STATES GEOLOGICAL SURVEY,
Washington, D. C., May 24, 1888.

SIR: I have the honor to transmit herewith a paper by Mr. Joseph P. Iddings, "On a group of volcanic rocks from the Tewan Mountains, New Mexico, and on the occurrence of primary quartz in certain basalts."

It is the result of an investigation of a suite of rocks collected by yourself in northwestern New Mexico in the autumn of 1887.

Its special value consists in showing a gradual transition in mineralogical composition from acid to basic lavas and adds one more to the volcanic areas of the Far West which have been investigated by the searching-analytical methods of modern science. Such studies as this of Mr. Iddings will enable us finally to elucidate some of the more important geological problems connected with the crystallization of eruptive rocks.

I recommend that the paper be published as a bulletin of the Geological Survey.

Very respectfully, your obedient servant,

ARNOLD HAGUE,
Geologist.

Hon. J. W. POWELL,
Director U. S. Geological Survey.

ON A GROUP OF VOLCANIC ROCKS FROM THE TEWAN MOUNTAINS, NEW MEXICO, AND ON THE OCCURRENCE OF PRIMARY QUARTZ IN CERTAIN BASALTS.

By Joseph P. Iddings.

INTRODUCTION.

Maj. J. W. Powell, Director of the U. S. Geological Survey, and Mr. William H. Holmes, in the course of their explorations in the Tewan Mountains, in New Mexico, during the field-season of 1887, collected a suite of rocks, which exhibit petrographic features of special interest.

The collection embraces a number of varieties of volcanic rocks and presents a series of transitions from acid rhyolite, through andesite, to quite basic basalt. This series, however, is interrupted in two places by the absence of varieties which occur in neighboring regions and, possibly, may exist in this one in places not yet visited. The greater part of the collection is made up of rhyolite, obsidian, and rhyolitic tufas and ashes, which cover a large area of the country explored. But the small number of andesites and basalts accompanying the rhyolites, by the variations in their mineral composition and physical habit, emphasize the fact that the rocks of the region present a series which grades in composition from one extreme to the other, rather than a number of well-defined types. It is the object of this paper to call attention to the mineralogical relations existing between the rocks of this locality, as another example of that which has been found to exist throughout the series of volcanic rocks occurring in the regions of the Great Basin,[1] including the Washoe district,[2] and of the volcanoes of the Pacific coast,[3] and the Republic of Salvador,[4] Central America; and also to describe the occurrence of porphyritical secretions of quartz in various members of the series, particularly in the basalt, and to offer some suggestions as to their probable origin.

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[1] Hague and Iddings. Notes on the volcanic rocks of the Great Basin. Am. Jour. Sci., 3d series, vol. 27, 1884, pp. 453–463.

[2] Ibid. Notes on the volcanoes of Northern California, Oregon, and Washington Territory. Am. Jour. Sci., 3d series, vol. 26, 1883, pp. 222–235.

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PETROGRAPHICAL DESCRIPTION.

In order to bring out more clearly the connection between the varieties of these rocks it will be necessary to describe as briefly as possible their mineral composition and general characters.

RHYOLITES.

Normal porphyritic varieties.—The rhyolites are light-colored rocks, varying from white and gray to buff, flesh-colored and light red. They are mostly porous and earthy in texture, and grade into pumice on the one hand and into fine-grained ash on the other. They are characterized by abundant porphyritical crystals of quartz and sanidine having a brilliant, glassy habit. The quartzes are mostly crackled and rounded, but in some of the rhyolitic tufas they have a perfect crystal form, and may be separated from the rock as dihexahedral pyramids, with very short prism faces. The sanidines frequently exhibit the intense blue iridescence or sheen, common to many occurrences in the Great Basin and the Rocky Mountains, and which is probably occasioned by a submicroscopic parting along planes parallel to an orthodome.[1] Sanidines exhibiting strong blue iridescence occur in the rhyolites from the following localities in New Mexico: right fork of Coyote Creek; Middleton's Ranch; seven or eight miles above Jemez Pueblo; and from the vicinity of Jemez Springs. The rhyolitic tufas range from fine grained earthy masses, without macroscopic crystals or fragments, to aggregations of rhyolitic ash with various sized fragments of pumice and dense rhyolite.

In thin sections, under the microscope, nearly all of the rhyolites present the same characters: a more or less glassy groundmass with numerous phenocrysts of quartz and sanidine. The quartz seldom exhibits crystal boundaries, being usually in rounded grains or angular fragments. It is poor in inclusions, many individuals showing none at all, others carrying a few glass inclusions. The sanidine is of very pure substance, frequently exhibiting crystal boundaries, though often in angular fragments, and is occasionally twinned according to the Carlsbad law.

Most of the rhyolite sections are free from plagioclase; nearly all contain a few scattered fragments of rather dark green augite; a smaller number carry a little brown hornblende, and rarely magnetite and zircon.

The groundmass is glassy and colorless, with a variable structure, being micro-cryptocrystalline to microcrystalline in patches, as well as axiolitic. In most cases it is marked by irregular, short, curved streaks, shaped like the minute fragments of glass in the tufas. In a few instances it is spherulitic, and in others, pure glass.

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[1] Whitman Cross. Contributions to the Mineralogy of the Rocky Mountains. Bull. U. S. Geol. Survey, No. 20 1885, p. 75.

A highly inflated and fibrous pumice is found at the old ruins, Te-yi, west of Española. It is light gray with a satin luster on the sides of the fibres, and carries phenocrysts of quartz and sanidine.

Obsidian.—A very beautiful jet-black obsidian occurs at Obsidian Hill. It is free from porphyritical secretions, except a few small spherulites and lithophysæ, the latter being abundant in a specimen from Rio San Diego. The spherulites and lithophysæ resemble those from Obsidian Cliff, Yellowstone National Park,[1] except that no fayalite has been observed in them. In the obsidian from six miles above San Antonio Springs there are curious flattened, dish-like spherulites. The obsidian from these localities is remarkably transparent, even in quite large flakes, being gray to smoke-colored. The color appears to be due to minute black specks, recognizable with a pocket-lens, the glass itself being colorless. The glass is hydrated, and upon being fused before an oxyhydrogen blowpipe, it boils up into white pumice through the escape of its water of hydration.

In thin section the glass is found to be almost free from microlitic secretions. There are scattered black grains, probably magnetite, and a few microscopic feldspars, mostly in minute groups of crossed crystals. The few small spherulites are like those just mentioned. Occasionally there are microscopic crystals of apatite and zircon.

Lithoidite.—In this connection may be mentioned a lithoidal, vesicular rhyolite without porphyritical secretions, from the peak near Pelado camp. The cavities are coated with glassy crystals of tridymite. In thin section it exhibits a spherulitic groundmass with radiating groups of feldspar microlites and branching spherulitic growths, quite similar to the microstructure of the lithoidal portion of Obsidian Cliff, Yellowstone National Park.

Mica-bearing rhyolite.—Another variety of porphyritic rhyolite is represented by specimens from the head of San Antonio Valley, from a conical hill in the Valle Grande, and from San Diego Cañon, east side of Jemez Springs. These rhyolites are light gray and white, with abundant porphyritical quartz and feldspar crystals and numerous small plates of biotite. Two of them are full of irregular cavities, the third is pumiceous. The quartz is in crackled grains and has a light amethystine color.

In thin section, the phenocrysts are found to be quartz, large sanidines and numerous plagioclases with some red mica. One thin section contains a little brown hornblende. The groundmass of the first two forms is microcrystalline and spherulitic, while that of the pumiceous form is pure glass filled with gas cavities. The latter carries a small amount of microlites, which are abundantly included in some of the feldspars. Both the quartz and feldspar crystals of this rock are rich in glass inclusions. The plagioclase probably belongs to the oligoclase series. Its presence together with that of mica in this variety of rhyolite gives it a dacitic character; for it approaches the composition of the dacites of the Great Basin, already referred to, which are characterized by abundant biotite, besides plagioclase and quartz, with less sanidine.

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[1] J. P. Iddings. Obsidian Cliff, Yellowstone National Park, Seventh Annual Report U. S Geological Survey, 1889. The nature and origin of lithophysæ and the lamination of acid lavas. Am. Jour. Sci., 3d series, vol. 33, 1887, pp. 36–45.

Tufa.—The rhyolitic tufas appear to be composed of the variety of rhyolite first described. They bear similar porphyritical crystals: quartz and sanidine, without plagioclase; and also carry small fragmentary crystals of augite. The groundmass is mostly glass, showing some micro-cryptocrystalline and microcrystalline portions, and the irregular markings which suggest minute fragments of glass. The groundmass is brecciated and exhibits various structures, the larger fragments being pumiceous. The tufas also contain fragments of other rocks which are mostly andesitic.

Ash.—The rhyolitic ashes are made up of minute angular fragments of glass and crystals. In some instances they contain a variable amount of gneissic fragments, consisting of angular particles of quartz, microcline and small fragments of schist. This archæan material sometimes occurs in such quantities as to constitute a whole layer of the rock.

ANDESITES.

The andesites of the collection number twenty-three different specimens, and may be divided into four classes according to their mineral composition. But these classes grade into one another so that no sharp line of demarkation can be drawn between them. They are:

I. Mica-andesite.
II. Hornblende-mica-andesite.
III. Hornblende-pyroxene-andesite.
IV. Pyroxene-andesite.

GENERAL CHARACTERISTICS.

The first class is characterized by the presence of mica, without hornblende or pyroxene.

The second class may be subdivided into two varieties, one containing mica and hornblende without pyroxene, and one containing mica, hornblende, and pyroxene.

The third class, also, may be subdivided into two varieties, one containing hornblende and pyroxene with a little mica, and one containing hornblende and pyroxene without mica.

The fourth class is characterized by the presence of pyroxene; some specimens containing a very little hornblende and some being free from it.

Within the last three classes there is a great variation in the physical habit of the rocks, but the microscopical characters of the minerals composing them are quite uniform. Thus the colors of the hornblende-mica-andesites range from light to dark shades of gray, brown, and red, some being mottled bluish gray and red. The nature of the groundmass varies from lithoidal and porous to glassy and compact. Most of the varieties are characterized by large porphyritical feldspars, 5 to 10^{mm} long, with smaller hornblendes and micas, and more or less numerous rounded grains of quartz. Two of the specimens have no large porphyritical crystals, but carry a multitude of small ones.

The colors of the hornblende-pyroxene-andesites are darker and include red, brown, gray and black. The groundmass varies from lithoidal to glassy. The porphryritical crystals consist of abundant feldspars about 5^{mm} long, with less noticeable ferro-magnesian silicates.

The five specimens of pyroxene-andesite differ considerably from one another. One is light purplish gray, full of small cavities, with numerous porphyritical feldspars and smaller pyroxenes. Another is a light red tufa inclosing darker red and black fragments. The remaining three specimens are bluish-black dense rocks, one of which is very vesicular. They carry porphyritical feldspars and smaller pyroxenes, and one of them bears a few small grains of brilliant crackled quartz. The last three forms closely resemble basalt.

Class I.—Mica-andesite.—Of this class there is but one representative, from one-half mile below Sulphur Spring, west of Pelado Peak. It is a gray pearlite full of dull white feldspars, with small inconspicuous micas. In thin section it is found to be a colorless glass rich in microlites, and having a well-marked pearlitic structure; there are numerous porphyritical plagioclases and brown biotites; several plagioclases appear to be surrounded by orthoclase, which does not occur in separate individuals. Magnetite, apatite, and zircon are accessory minerals.

Class II.—Hornblende-mica-andesite.—There are two specimens of hornblende-mica-andesite which contain no pyroxene, and eight which carry more or less hypersthene and augite besides the mica and hornblende.

In thin section they all agree in having a glassy groundmass, with one exception, in which it is holocrystalline with numerous aggregates of tridymite. The glassy groundmass in most cases is full of microlites of feldspar and augite with grains of magnetite, which give it the so-called felt-like structure. The glass is colorless except in one specimen, where it is brown. The groundmass carries microscopic crystals of pyroxene, which are often colored red and sometimes are quite opaque, besides feldspars and occasionally small crystals of hornblende and mica. The porphyritical crystals are plagioclase, mica, hornblende, hypersthene, and augite. The plagioclase forms the largest individuals and carries a great number of glass inclusions; in some cases the amount of glass exceeds that of the feldspar substance. At times the feldspar appears to be made up of a group of small individuals with nearly parallel orientation, between which there is more or less glass. From their optical behavior the plagioclases appear to belong to the andesine-labradorite series.

The mica is biotite; its color is brown and reddish brown, sometimes with a greenish tinge in sections inclined to the base. It has a very strong absorption and a small optic angle. Occasionally it is almost entirely replaced by iron oxide.

The hornblende is dark brown with strong pleochroism, in some cases being greenish brown, but more frequently reddish brown. The color is sometimes different at the two ends of a crystal. The hornblende also is occasionally replaced by an opaque iron oxide.

The hypersthene and augite are usually in smaller crystals than the hornblende. The hypersthene is distinctly pleochroic, being green parallel to the longitudinal axis, $\dot{c}$, and light reddish brown at right angles to it. It has quite the same character as the hypersthene found in the andesites of the Great Basin and Pacific Coast volcanoes. The augite is light greenish and is not pleochroic.

The iron oxide occurs in small irregular crystals whose form indicates magnetite. Apatite and zircon are found in almost all of the thin sections. The apatite is often colored reddish brown and exhibits a decided absorption parallel to the longitudinal axis. The quartz grains which are observed in most of the hand specimens are found in only four of the thin sections, partly because they are not very abundant and partly because they fall out during the preparation of the section. The quartzes observed are of the purest substance with perfectly uniform optical orientation throughout each individual grain. They are almost entirely free from inclusions; in some cases they contain one or two dihexahedral glass inclusions, and in one instance a small prismatic crystal of apatite.

Class III.—Hornblende-pyroxene andesite.—Of the rocks referable to this group five specimens carry a little mica, while two contain none. They are quite similar to the hornblende-mica-andesites, but are somewhat darker colored with less prominent porphyritical crystals. In thin sections they exhibit the same miscroscopical characters as the rocks just described, differing from them only in the relative proportions of the mineral constituents. Three specimens, however, deserve special mention. Two are andesitic pitchstones from the cliff near the Warm Spring on the north side of the cañon, east branch of San Diego Creek. They are black, resinous glasses, with abundant white phenocrysts of feldspar and some rounded grains of crackled quartz.

In thin section they are found to consist of colorless glass, rich in trichites and microlites, which are not uniformly distributed through the glass, but are arranged in layers and streams, which curve around the crystals and produce a strongly marked flow structure. The porphyritical crystals are: plagioclase crowded with glass inclusions, brown hornblende, hypersthene and augite, and in one section a little biotite. The quartz grains are not found in the thin sections.

The third rock is from about the same locality; it is red, streaked with black pearlitic glass, with small fragments of light purple rock. It bears numerous porphyritical feldspars, and considerable quartz in brilliant, crackled grains, none of which are found in the thin sections made from it. Under the microscope the rock appears to be a microscopic breccia of different kinds of glass: colorless, yellow and brown, in some places trichitic, in others clouded. The porphyritical secretions are like those of the previous varieties, with a little mica.

Class IV—Pyroxene-andesite.—Within the group of pyroxene-andesites there is a range from a variety quite similar to the hornblende-pyroxene-andesite to one which resembles andesitic basalt without the olivine.

The first variety is represented by a bluish-black rock with irregular cavities, from a coulée two miles northeast of Polvadera Rancho. The phenocrysts consist of medium-sized feldspars and small pyroxenes, with a few small grains of brilliant quartz. In thin section the groundmass is found to be glassy with a felt-like structure, produced by the microlites of feldspar and augite. The porphyritical plagioclase has the same character as that of the hornblende-pyroxene-andesites, being full of glass-inclusions. The hypersthene and augite have the same characters as those already described. There is a very small amount of reddish-brown hornblende present.

The light red andesitic tufa from Santa Clara Cañon has the same mineral composition as that just described, but shows no quartz grains.

Another variety of pyroxene-andesite occurs eight miles from the head of Coyote Cañon. It is light purplish gray with numerous irregular cavities, and bears porphyritical feldspars and inconspicuous pyroxenes. In thin section the groundmass is found to be glassy, and full of microlites of feldspars and augite with grains of iron oxide. The phenocrysts are plagioclase, hypersthene, and augite, with accessory iron oxide and apatite. The plagioclase crystals differ from those in the andesites just described. They are sharply rectangular, with fewer glass inclusions, and appear to belong to more basic species, probably to the labradorite-bytownite series. Hypersthene is more abundant than augite, both having the same characters as those in the other andesites.

The dense, bluish-black variety, from seven or eight miles above Jemez Pueblo, bears numerous porphyritical feldspars, and in thin section is found to have a groundmass of dark brown, globulitic glass with microlites. The porphyritical feldspars are rich in brown glass inclusions. The small porphyritical pyroxenes are mostly hypersthene.

The vesicular variety of pyroxene-andesite taken from an Indian metate, or grinding-mill, found five miles above Jemez, is similar in feldspar appears to be made up of a group of small individuals with nearly parallel orientation, between which there is more or less glass. From their optical behavior the plagioclases appear to belong to the andesine-labradorite series.

The mica is biotite; its color is brown and reddish brown, sometimes with a greenish tinge in sections inclined to the base. It has a very strong absorption and a small optic angle. Occasionally it is almost entirely replaced by iron oxide.

The hornblende is dark brown with strong pleochroism, in some cases being greenish brown, but more frequently reddish brown. The color is sometimes different at the two ends of a crystal. The hornblende also is occasionally replaced by an opaque iron oxide.

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The iron oxide occurs in small irregular crystals whose form indicates magnetite. Apatite and zircon are found in almost all of the thin sections. The apatite is often colored reddish brown and exhibits a decided absorption parallel to the longitudinal axis. The quartz grains which are observed in most of the hand specimens are found in only four of the thin sections, partly because they are not very abundant and partly because they fall out during the preparation of the section. The quartzes observed are of the purest substance with perfectly uniform optical orientation throughout each individual grain. They are almost entirely free from inclusions; in some cases they contain one or two dihexahedral glass inclusions, and in one instance a small prismatic crystal of apatite.

Class III.—Hornblende-pyroxene andesite.—Of the rocks referable to this group five specimens carry a little mica, while two contain none. They are quite similar to the hornblende-mica-andesites, but are somewhat darker colored with less prominent porphyritical crystals. In thin sections they exhibit the same miscroscopical characters as the rocks just described, differing from them only in the relative proportions of the mineral constituents. Three specimens, however, deserve special mention. Two are andesitic pitchstones from the cliff near the Warm Spring on the north side of the cañon, east branch of San Diego Creek. They are black, resinous glasses, with abundant white phenocrysts of feldspar and some rounded grains of crackled quartz.

In thin section they are found to consist of colorless glass, rich in trichites and microlites, which are not uniformly distributed through the glass, but are arranged in layers and streams, which curve around the crystals and produce a strongly marked flow structure. The porphyritical crystals are: plagioclase crowded with glass inclusions, brown hornblende, hypersthene and augite, and in one section a little biotite. The quartz grains are not found in the thin sections.

The third rock is from about the same locality; it is red, streaked with black pearlitic glass, with small fragments of light purple rock. It bears numerous porphyritical feldspars, and considerable quartz in brilliant, crackled grains, none of which are found in the thin sections made from it. Under the microscope the rock appears to be a microscopic breccia of different kinds of glass: colorless, yellow and brown, in some places trichitic, in others clouded. The porphyritical secretions are like those of the previous varieties, with a little mica.

Class IV—Pyroxene-andesite.—Within the group of pyroxene-andesites there is a range from a variety quite similar to the hornblende-pyroxene-andesite to one which resembles andesitic basalt without the olivine.

The first variety is represented by a bluish-black rock with irregular cavities, from a coulée two miles northeast of Polvadera Rancho. The phenocrysts consist of medium-sized feldspars and small pyroxenes, with a few small grains of brilliant quartz. In thin section the groundmass is found to be glassy with a felt-like structure, produced by the microlites of feldspar and augite. The porphyritical plagioclase has the same character as that of the hornblende-pyroxene-andesites, being full of glass-inclusions. The hypersthene and augite have the same characters as those already described. There is a very small amount of reddish-brown hornblende present.

The light red andesitic tufa from Santa Clara Cañon has the same mineral composition as that just described, but shows no quartz grains.

Another variety of pyroxene-andesite occurs eight miles from the head of Coyote Cañon. It is light purplish gray with numerous irregular cavities, and bears porphyritical feldspars and inconspicuous pyroxenes. In thin section the groundmass is found to be glassy, and full of microlites of feldspars and augite with grains of iron oxide. The phenocrysts are plagioclase, hypersthene, and augite, with accessory iron oxide and apatite. The plagioclase crystals differ from those in the andesites just described. They are sharply rectangular, with fewer glass inclusions, and appear to belong to more basic species, probably to the labradorite-bytownite series. Hypersthene is more abundant than augite, both having the same characters as those in the other andesites.

The dense, bluish-black variety, from seven or eight miles above Jemez Pueblo, bears numerous porphyritical feldspars, and in thin section is found to have a groundmass of dark brown, globulitic-glass with microlites. The porphyritical feldspars are rich in brown glass inclusions. The small porphyritical pyroxenes are mostly hypersthene.

The vesicular variety of pyroxene-andesite taken from an Indian metate, or grinding-mill, found five miles above Jemez, is similar in composition and structure to the previous rock, the brown globulitic glass being particularly fine.

Owing to the preponderance of orthorhombic pyroxene or hypersthene in these pyroxene-andesites they belong to the variety hypersthene-andesite.

BASALTS.

The basalts of the collection are mostly compact, fine grained rocks, differing in color from light gray to greenish black, in two cases being dark red.

Normal basalts.—The basalt from a dike on the south side of Rio Chama, one and one-half miles west of Abiquiu, is light gray, very fine grained and dense. In thin section it is found to be glassy with abundant lath-shaped plagioclase, and long augite crystals with grains of magnetite and some trichites. There are almost no porphyritical secretions. There is considerable iron oxide and nearly opaque secondary matter, which appears to replace the olivines that have been decomposed. There is no hypersthene in this nor in any of the other basalts in the collection.

A dike four miles northeast of Abiquiu is formed of another variety of basalt. It is a dense black rock with a few small phenocrysts. In thin section it is seen to be composed of microscopic crystals and grains of violet-brown augite and magnetite, with a small amount of lath-shaped plagioclase and much colorless olivine in small porphyritical crystals; the whole is cemented by a colorless glass bearing black trichites.

The basalts which form the second and fourth ledges from the top of the wall of the Rio Grande Cañon are very much alike; they are light-gray dense rocks with small phenocrysts. In thin sections they are found to be holocrystalline, with much lath-shaped plagioclase and less augite in grains and stout crystals, besides magnetite and much colorless olivine in crystals and grains. There are a few porphyritical crystals of olivine and augite and very abundant microscopic needles of apatite.

Quartz-bearing basalt.—Of the seven remaining specimens of basalt from the neighborhood of Rio Grande Cañon, two are light-gray dense rocks, three are greenish black, dense and fine grained, and two dark red and vesicular.

The light gray basalts are somewhat like those just described, but bear more porphyritical secretions of olivine, besides abundant small grains of crackled quartz. These quartz grains are surrounded by light green shells, composed of microscopic augites. In some cases the shells cover the quartz grains on the surface of the handspecimen; in others, especially on weathered surfaces of the rock, the quartz has dropped out, leaving the augite shell firmly adhering to the rock. The quartz grains are distributed through the rock quite as uniformly, though not so abundantly, as the crystals of olivine are.

In thin section these two basalts are alike and resemble those forming the second and fourth ledges on the cañon wall, except that they are slightly coarser grained. They are holocrystalline, and are composed of lath-shaped and tabular plagioclase, light violet-brown augite in crystals and grains, with magnetite and much olivine in grains and porphyritical crystals. None of the quartz grains appear in the thin sections of these two basalts, but the augite rings and clusters indicate where they were located before the grinding of the sections. The three specimens of greenish black basalt also exhibit microscopic secretions of olivine and grains of quartz like those just described, being even more abundant. The quartz is sometimes quite compact and free from cracks..

In thin section these basalts have the same microstructure as those just mentioned, but are finer grained and contain rather more augite. The olivine is partly altered to dark green serpentine, which is also scattered through the rock and gives it its green color. In one thin section there are seven quartz grains or indications of their former presence, in another there are two, and in a third there are ten.

The red vesicular basalts also bear many porphyritical grains of quartz; on the surface of one side of a small specimen 7.5^{cm} long by 6^{cm} wide (3 by 2½ inches) there are seventy-five grains, and they are no more abundant on this surface than on the others. In thin sections these red basalts resemble the general structure of the gray, compact varieties, but they do not appear to be holocrystalline; there is probably a little glass present. The rocks are filled with red oxide of iron, which also colors the margins of the porphyritical olivines. They contain a little more augite than the gray basalts do. Most of the quartz grains have dropped out in grinding, but fragments remain, and in most cases the augite rings still indicate where they were formerly located. From these indications it appears that in one thin section which is 2^{cm} in diameter there were once five grains of quartz.

MINERALOGICAL GRADATIONS.

From the foregoing descriptions it is evident that the volcanic rocks from this portion of New Mexico present a number of varieties grading from one extreme of mineral composition to another, which, judging from other localities, corresponds to a variation in chemical composition. This transition may be expressed by the following table, which gives the essential mineral constituents of the different varieties.

Table showing the variation in the essential minerals of the rocks from the Tewan Mountains.

Rocks.	Component minerals.								
Obsidian									
Rhyolite	quartz	sanidine					ac		ac.
	quartz	sanidine	plagioclase	mica	ac				ac.
*Dacite**	*quartz*	*ac*	*plagioclase*	*mica*	*ac*	*ac*	*ac*		*ac.*
Mica-andesite		ac	plagioclase	mica					ac.
Hornblende-mica-andesite	ac		plagioclase	mica	hornblende.				ac.
	ac		plagioclase	mica	hornblende.	hypersthene	augite		ac.
Hornblende-pyroxene-andesite	ac		plagioclase	ac	hornblende.	hypersthene	augite		ac.
	ac		plagioclase		hornblende.	hypersthene	augite		ac.
Pyroxene-andesite	ac		plagioclase		ac	hypersthene	augite		magnetite.
			plagioclase			hypersthene	augite		magnetite.
*Olivine-bearing andesite or hypersthene-bearing basalt**			*plagioclase*			*hypersthene*	*augite*	*olivine*	*magnetite.*
Basalt	ac		plagioclase				augite	olivine	magnetite.

* Not in the collection from this region.

In this series the most persistent constituent expressed in general terms is feldspar, but this passes through a series of variations. Thus it is wholly orthoclase in the first variety of rock; orthoclase and oligoclase, possibly with albite, in the second. But in the following varieties, since the particular species of the plagioclase has not been definitely determined, no attempt has been made in the table to separate them. It can be said, however, that the plagioclase becomes more basic as basalt is approached, passing through andesine to labradorite and possibly bytownite and anorthite. The composition of dacite is indicated in italics; it is similar to that of the second variety of rhyolite but the relative proportions of the minerals are different. It is possible that the glassy mica-andesite may have the chemical composition of dacite.

Mica, as an essential constituent, makes its appearance before hornblende does, and disappears sooner. Hornblende bears a similar relation to hypersthene and augite, which make their appearance together in these rocks, with the exception of the accessory augite in the first variety of rhyolite, which differs slightly from the other augites. Hypersthene runs its course before augite, which reaches its greatest development in the basalts, where olivine appears.

The intermediate forms of olivine-bearing andesite or hypersthene-bearing basalt, which are so abundant in other regions of the West, are not represented in this collection; their composition is indicated in italics in the table.

Magnetite is an accessory constituent of the acid rocks of the series, and with the gradual increase of basicity assumes the role of an essential constituent in the more basic members of the series. The occurrence of quartz as an accessory constituent of various members of this series will be fully discussed later.

Owing to the limited size of the collection it would be unwise to offer any generalizations as to the preponderance of one variety over another in this region. And, except for the abundance of rhyolite, the collection illustrates the variable character of the rocks, which is still more noticeable in larger collections from other regions, and becomes still more apparent when large bodies of volcanic rocks are studied in the field, for the mineral composition of a rock-mass varies within certain limits in nearly every case, and the greater the number of occurrences the more difficult it is to select a particular combination of minerals as a typical one. Moreover the predominance of any one variety in a given region may be an actual predominance or only an apparent one due to geologic conditions, such as the covering up or the denudation of other varieties; and a predominant variety of volcanic rock in one locality may be a subordinate variety in a neighboring district.

THE OCCURRENCE OF PRIMARY QUARTZ GRAINS IN BASALTS.

BASALT FROM RIO GRANDE CAÑON.

Turning now to a consideration of the occurrence of quartz in the form of porphyritical secretions in the basalt from Rio Grande Cañon, it is to be observed that:

The quartz is not an alteration product of other minerals, for the rocks are quite fresh, and exhibit only a very slight alteration on the surface of the olivines. On the contrary, it is evident that the quartz grains existed in the rock-mass in their present form previous to the final consolidation of the magma. For each grain is closely surrounded by a shell of augite crystals intimately connected with the inclosing rock-mass. This augite shell forms a narrow border or ring in thin section, and is composed wholly of short crystals of augite radiating from points along the side of the rock-mass toward the quartz. The augite crystals crowd closely against the surface of the quartz grains, but between them and the rock-mass there is no line of demarkation; the outside augite crystals lie among the feldspar and magnetite individuals, and take part in the general structure of the rock. In the holocrystalline and coarser-grained varieties the feldspar sometimes incloses a number of the augites situated on the outside of the shell, and the feldspar is thus proved to be a later crystallization than the shell.

The substance of the quartz composing these grains is perfectly pure, without inclusions of gas, fluid or glass; in one instance there was a minute crystal of zircon. Each grain is a single individual, with uniform optical orientation throughout its entire extent; occasionally two individuals are in juxtaposition. But there is nothing like aggregates of quartz, the form in which secondary quartz usually appears. The grains are rounded or subangular, in only one instance did the shape and optical orientation indicate a bipyramidal form.

The substance and shape of the quartzes are like those of the porphyritical quartz grains in other volcanic rocks when they are free from inclusions, which sometimes happens in the rhyolites. They are not like the quartzes of granites and gneisses or of their derivatives, the sandstones, which are more or less filled with inclusions of gas and fluid, and frequently with individualized inclusions.

It is evident, therefore, that the quartz grains are primary constituents of the rock; that they are more like the porphyritical quartz secretions of other volcanic rocks in their microscopical habit than like fragments of quartz from granitic or gneissic rocks or sandstones. Moreover, their mode of occurrence in these particular basalts militates against the theory that they may be fragments of foreign rocks which have been caught up by the basalts during their eruption; for they are uniformly and intimately distributed through each of the seven hand-specimens, which were collected from different parts of a large basalt flow, at least four miles long, and which represent portions of it differing in crystallization and general habit. Further, the grains are isolated individuals, and not clusters, and never exhibit indications of having been crystallized together with other minerals. They have every appearance of being primary secretions, or crystallizations from the rock magma.

The occurrence and distribution of very abundant quartz grains throughout the recent basalt flow near the Cinder Cone, ten miles northeast of Lassen Peak, California, has been described by Mr. J. S. Diller,[1] and as claimed by him leaves no reasonable doubt of the primary and essential nature of the quartz in that particular basalt.

Two new occurrences of quartz-bearing basalt may here be described, since they show that such basalts are scattered over a large area of country, having been found in California, Nevada, Arizona, New Mexico, and Colorado.

BASALT FROM ARIZONA.

That from Arizona is a fine example of quartz-bearing basalt, it is a red, compact rock from the cañon near granite tanks, in the vicinity of Santa Maria Basin, Arizona, and was collected by Mr. Clarence King. In the hand-specimens the only porphyritical secretions are rounded grains of glassy quartz from 1 to 8^{mm} in diameter, together with somewhat smaller olivines. The quartz grains are so numerous that one small specimen about 6^{cm} (less than two and one-half inches) square shows as many as thirty grains on all its surfaces. In thin sections the basalt is glassy with abundant lath-shaped plagioclases and red oxide of iron scattered through it, which obscures the other constituents. The groundmass bears small porphyritical crystals of light-green augite and olivine. In the dense specimens the olivine is partly fresh and colorless, partly colored orange and red. In the porous specimen the olivine has been entirely removed, leaving only its characteristic outlines marked by iron oxide, and the augite is more or less reddened. The quartz is the same in both varieties, of which seven thin sections were made showing quartz. It forms rounded and subangular grains, of very pure substance, almost free from inclusions; the few inclusions observed consist of colorless glass, in one instance gas, besides a small zircon and an apatite. One large quartz grain has two inclusions of red glass with microlites like that on the outside of the same grain, and it is probable that these apparent inclusions are cross-sections of pockets or pipes of the outer glass.

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[1] Am. Jour. Sci., 3d series, vol. 33, pp. 45-50, 1887.

Only in a few instances do the quartz grains possess a continuous shell of augite crystals, which in these cases is very narrow and close fitting. Most of the grains are bordered directly by the groundmass of the rock, or have a fragmentary augite shell, which is sometimes separated from the quartz grain by red glass, sometimes by a strip of groundmass whose flow-structure indicates that it has forced its way between the augite shell and the quartz grain. Fragments of augite shell are observed at some distance from the quartz, or even entirely isolated in the rock-mass, from which it appears that the quartz grains were at one time surrounded by a shell of augite, as in most other occurrences of quartz-bearing basalt, but that in this instance the subsequent movement of the magma broke the shells and dislocated them.

BASALT FROM COLORADO.

The second occurrence to be described is that of a dark-colored, fine-grained basalt from Elk Head Creek, at the southeast base of Anita Peak, fifteen miles northeast of Hayden, Colorado, in which basalt porphyritical quartz grains are very abundant. Dr. Whitman Cross kindly furnished me with the thin sections of this rock for study and description. They represent two modifications of the basalt, and show that the rock is partly altered, the olivines having been converted into serpentine, which is disseminated generally through the rock. The mineral composition and structure of this basalt are about the same as those of the basalts from Rio Grande Cañon, New Mexico, but the quartz grains, which are equally abundant in both basalts, have a somewhat different microscopical character.

In the basalt from Elk Head Creek the quartz grains are surrounded by an augite shell or ring in every case. But the shell is quite thin and its connection with the quartz substance is more intimate. In places crystals of augite penetrate the quartz or are entirely inclosed within it, but they are always located along the margin of the quartz grain. In some instances the quartz exhibits sharp-edged crystal boundaries, which are usually adjacent to an area of serpentine or calcite, which may now occupy what was formerly glass or a cavity. At times the straight, crystal edge is bordered by a narrow rim of augite. The quartz grain is sometimes made up of two or three individuals crystallized together. The inclusions are numerous, and consist of zircon and occasionally apatite, with frequent gas cavities and less abundant glass inclusions. The microscopical character of the quartz resembles that of certain porphyries.

Its primary nature is shown by the presence of glass inclusions and the encircling shells of augite and by its uniform distribution through the rock. The existence of crystal boundaries to the quartz grains indicates that there was little, if any, resorption of the quartz by the inclosing magma. And the inclosure of augite crystals near the margin of grains containing dihexahedral glass inclusions suggests that the crystallization or secretion of the quartz took place in a molten magma in the presence of augite crystals similar to those forming the inclosing shell. It should be observed in this connection that partially corroded quartz and quartz with crystal boundaries occur together in rhyolites and related quartz-bearing rocks.

Quartz grains occur in the same manner but to a much less extent in some of the basalts near Eureka, Nevada, especially in those forming Basalt Peak and covering the country southeast of Richmond Mountain.

They are very abundant in certain basaltic rocks from near Crescent and Whitehead Peaks and Camel Mountain, Colorado.

POSSIBLE ORIGIN OF THE PORPHYRITICAL QUARTZ.

Its exceptional occurrence.—The occurrence of primary quartz in rounded grains in basaltic rocks is exceptional, and is contrary to the laws which appear to govern the development of the mineral constituents of volcanic rocks, so far as our present knowledge goes. The minerals which crystallize in a rock magma result from the chemical affinities inherent in a complex solution of silica, alumina, alkaline earths and alkalies, including iron, lime, magnesia, potash, and soda, between the various demands of which there must be a mutual accommodation. Hence it is evident that the component minerals of a given rock must be those which, under the conditions attending their crystallization, satisfy all the chemical demands imposed by those conditions.

Variation of conditions.—That changes in the conditions under which crystallization takes place in a mixed solution affect the nature of the crystallization is well known, and has been demonstrated experimentally. From the generally uniform nature of the crystallization of most volcanic rocks the correspondingly uniform conditions attending their solidification are indicated. Where variations in the products of crystallization occur the condition affecting them may often be recognized. Hence variations from the general order and nature of crystallization within certain limits have become generally accepted facts, consequently the mineral composition of rocks is not expected to be in rigid accord with their chemical character within these limits.

While in the great majority of cases the mineral composition of volcanic rocks indicates a generally uniform range of condition which must have attended their consolidation, yet there are exceptions to the ordinary grouping of minerals in these rocks that emphasize the influence of certain attendant conditions, which are evidently physical. An instance of this is the mineral association in the lithophysæ of some rhyolitic obsidians, especially in that of Obsidian Cliff, Yellowstone National Park, and of Cerro de las Navajas, Mexico. These holocrystalline portions of the acid lavas are composed of alkali feldspars, quartz, tridymite and fayalite, an iron-olivine, that is, an orthosilicate of iron. This latter mineral is in very small amount compared with the free silica, quartz and tridymite. The chemical composition of the lithophysæ is essentially the same as that of the remainder of the rock, and is like that of normal rhyolites. Hence we are forced to seek the cause of the development of the fayalite in something besides the chemical character of the magma.

Influence of absorbed water.—In a paper on this occurrence[1] I have discussed the matter at length, and after calling attention to the experiments of M. Daubrée on the action of superheated steam on acid glass, and to experiments of others who have undertaken to produce these minerals artificially, I arrived at the conclusion that the most reasonable explanation of what in petrology seems an anomalous association of primary igneous minerals is the reference of their occurrence to aqueo-igneous action, which was induced by the presence of a considerable amount of water-vapor absorbed in the molten magma. The strong mineralizing influence of the water-vapor under such conditions is apparent both in the structure and mineral composition of the lithophysæ and in the alternating crystalline and glassy layers in the laminated lithoidal portion of the same flow of lava. For in the latter case the thin horizontal laminæ of the magma in any particular portion of the mass must have been subjected to like rates of cooling and the same pressure, yet these laminæ solidified alternately holocrystalline and glassy.

Comparison of exceptional occurrences.—The occurrence of iron-olivine in a rhyolite with 75 per cent of silica and less than 2 per cent of iron oxide is as remarkable and as exceptional as that of quartz in the form of porphyritical crystals in basalt. They are both of the same kind, in that they are the occurrences of extremely acid and basic silicate minerals together in rocks, where we are generally accustomed to see silicate minerals of intermediate or of more closely related composition. In the first instance, however, most of the conditions under which the minerals crystallized can be surmised, but in the second case there must necessarily be great uncertainty, for the quartz was evidently crystallized in some early period in the history of the rock, when the conditions then existing made its separation necessary. Whether the quartz was the only mineral crystallized at that time or whether there were others associated with it can not be determined in most of these basaltic occurrences. But in the basalt from Elk Head Creek, Colorado, the small augites which penetrate the margin of the quartz crystals were evidently contemporaneous with the close of the quartz crystallization.

From the rounded form of the quartz grains in most of its occurrences it is probable that the quartzes were in process of resorption by the basic magma when the final solidification of the rock took place. A similar resorption of porphyritical minerals which have crystallized in an early period of a rock's existence is frequently observed in all varieties of volcanic rocks, as, for example, partly resorbed hornblendes and feldspars, and the rounded quartz grains of rhyolites and porphyries. The idea that these phenomena indicate changes in the physical conditions experienced by the magma and not in its chemical composition is a generally accepted one.

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[1] Am. Jour. Sci., 3d series, vol. 33, 1887, pp. 36-45. Also Seventh Annual Report, U. S. Geological Survey, 1889.

Changes of physical conditions.—Let us consider what may be some of the changes of condition experienced by rock magmas within the crust of the earth. In the case of a molten, viscous magma situated at some depth beneath the earth's surface the two physical factors which at first appear to exert the greatest influence on its existence as a plastic or fluid magma are *temperature* and *pressure.*

Other things remaining constant, the magma will be more plastic the higher the temperature, and with a decrease of the temperature below a certain point consolidation will take place. Consolidation under these circumstances, that is, at considerable depths within the earth, would be ordinarily accompanied by crystallization, as a rapid chilling is only possible when small bodies of magma are brought in contact with cold rocks. The nature of the crystallization will undoubtedly vary within certain limits with the rate of cooling.

If, on the other hand, the temperature of the magma is supposed to remain constant and the pressure to vary, and if we assume that an increase of pressure diminishes the mobility of the molecules of the magma by condensing them, we should expect that an increase of pressure would tend to solidify the mass. The latter supposition appears to be the most rational, and has received support from the experiments of Dr. William Hallock.[1] This is also the conclusion reached by Reyer in his work on the physics of eruptions and of eruptive rocks.[2] Dr. Hallock's observations show that cubical pressure unaccompanied by an increase of temperature simply increases the rigidity or viscosity of a body, but that in cases where pressure is allowed to produce motion by the crushing or yielding of the molecules of a substance the internal friction may generate heat enough to fuse the substance, and thus reduce its rigidity.

The solidification of a molten, amorphous mass by increasing its viscosity might convert it into a solid glass, since Lagorio[3] has observed that solid glass is denser than the same glass when molten, or it might convert it into a crystalline mass, according to whether the viscosity was suddenly increased or slowly increased; the changes being analogous to the rapid increase of viscosity by chilling or the slower increase by gradual cooling. The latter permits the molecules to arrange themselves in obedience to certain chemical and physical affinities into crystalline minerals, while the former prevents such an arrangement.

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[1] William Hallock. The Flow of Solids. Am. Jour. Sci., 3d series, vol. 34, 1887, pp. 277-281. Also, Bull. U. S. Geological Survey, No. 55, 1890.

[2] E. Reyer. Beitrag zur Fysik der Eruptionen und der Eruptiv-Gesteine, Vienna, 1877, p. 119.

[3] Tschermak's Mineral. u. petrog. Mittheil., new series, vol. 8, 1887, p. 510.

Moreover, if we consider rock magmas as saturated solutions of silicate salts, as Lagorio[1] has done in the paper already alluded to, we may apply to them the law which Sorby deduced for aqueous solutions of salts, namely, that the solubility of those salts, which, like the silicates, expand upon solution and condense upon crystallization,[2] is decreased by increasing pressure. In other words, in such solutions an increase of pressure would tend to crystallize the salts from solution. Hence in a molten rock magma an increase of pressure alone would tend to induce the crystallization of certain silicate minerals from the magma, or might lead to the crystallization of the whole magma.

From the foregoing argument concerning the effect of increasing pressure on the viscosity of magmas and on their crystallization it appears that an increase of pressure might lead to the consolidation of rock magmas at temperatures above their melting point for lower pressures. It might therefore happen that a highly heated magma exists within the earth under such great pressure that it is a solid mass, which may be either amorphous or completely crystalline, or partly amorphous and partly crystalline. Such a condition would be one of *unstable consolidation*, for upon a relief of the pressure the temperature would be sufficient to melt the mass.

Influence of water-vapor.—It is becoming more and more evident that a small amount of absorbed water-vapor in molten rock magmas plays an important part in their liquifaction as well as in their crystallization. The influence of water-vapor upon the viscosity of lavas has been suggested long ago by Scrope and others, who asserted that its presence in molten lavas increased their fluidity. Its part as the explosive agent in volcanic eruptions is well established, and its presence in larger or smaller amounts in every volcanic rock has often been demonstrated.

The increased fusibility of hydrated glass has been noted by M. Daubrée,[3] and may be easily recognized in the case of hydrated obsidian like that from Obsidian Cliff and from New Mexico. These obsidians, containing about 0.5 per cent of water upon being fused before an oxyhydrogen blowpipe, melt at something less than white heat to an inflated glass, which, at first, is quite fluid, and flows away rapidly from the strong current of the blowpipe flame. It is so fluid that it curls over the edge of the unmelted portion of the rock and sometimes forms pendent drops. Upon heating this glass until it loses its water and contains no more gas bubbles, and allowing it to cool, a colorless or pale yellowish glass is obtained, which melts before the same blowpipe flame only at an intense white heat, and then forms a very viscous glass which moves sluggishly before the same blowpipe current, and presents a decided contrast to the obsidian glass first melted.

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[1] Tschermak's Mineral. u. petrog. Mittheil., new series, vol. 8, 1887, p. 421.

[2] J. Roth. Allg. u. Chem. Geol., vol. 2, 1885, p. 52.

[3] Études Synthétiques de Géologie Expérimentale. Paris, 1879, p. 161.

The bearing of Dr. Guthrie's experiments with chryohydrates or eutectic substances upon this problem has been pointed out by Prof. J. W. Judd[1] in a paper on The Natural History of Lavas as Illustrated by the Materials Ejected from Krakatoa. Dr. Guthrie demonstrated that the melting point of certain compounds is considerably below that of either of their components; they therefore behave like alloys. He experimented chiefly with hydrated substances, though not entirely. Prof. Judd has taken niter as an example. Under ordinary conditions this substance melts at 320° C.; upon the addition of 4.89 per cent of water its melting point is reduced to 262° C., and when it contains 29.07 per cent of water it melts at 97.6° C. Hence a mass of niter within the earth would be solid at 300° C., but at the same temperature upon the accession of 15 or 20 per cent of water it would be molten or in a condition to become molten if the pressure did not prevent it. Inversely, some substances may exist as fluids at temperatures considerably below their ordinary point of solidification by being combined with water; there is a point, however, at which solidification sets in. Mr. J. J. Harris Teall, who has been studying some of Dr. Guthrie's eutectic compounds, finds that upon solidification they separate into their component parts, which interpenetrate one another like quartz and feldspar in granophyre or micropegmatite. Prof. Judd, in his paper, suggests that the mixed silicates in rock magmas may be eutectic substances, and Prof. Lagorio, in the paper already mentioned, states that the feldspars of the lime-soda feldspar series behave like eutectic substances. Prof. Judd also calls attention to the power of the water of hydration to lower the melting point of zeolites and siliceous glasses such as tachylites, hydrotachylites and palagonites.

While we are ignorant of the actual influence of absorbed water-vapor upon deep-seated molten magmas, it seems reasonable to assume that it is of the same kind as upon molten magmas at or near the surface of the earth. For the most apparent difference between the condition of a deep-seated and a surface magma is the pressure under which each exists. Hence it is probable that the presence of water-vapor tends to increase the liquidity of the mass. But since the accession of water-vapor would increase the tension of the magma, a point may be reached when the resistance of the inclosing rocks is overcome, and the absorbed vapor becomes an active agent in the eruption of the magma.

If we consider the action of water-vapor in increasing the liquidity of molten magmas as simply a physical one, it must consist in a tendency to increase the mobility of the molecules of the mass among themselves. One effect of absorbed water, then, would be to retard an increase of viscosity, which was being produced in a magma either by cooling or an increase of pressure upon it. And this retardation might permit the crystallization of the more hydrated portions of the mass, while the less hydrated parts became too viscous for crystallization, a condition of affairs which undoubtedly existed in the obsidian magma at Obsidian Cliff, where holocrystalline portions occur irregularly scattered through amorphous ones.

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[1] Geol. Mag., new series, vol. 5, 1888, pp. 1–11.

It is to be remarked that the crystallization which was in this instance specially induced by the influence of superheated water-vapor differs from that which usually takes place in acid lavas upon cooling, and that the result was the production of *extremely basic and acidic minerals by the side of one another*, or the production of chemical extremes; a result in a measure analogous to the dissociation of the base and acid of a chemical compound by heating. In this case the absorbed water-vapor apparently weakened the affinity between the bases and the silica, which separated into basic silicates and quartz and tridymite. Hence, we may reasonably expect that in deep-seated magmas conditions may obtain by which the water-vapor in them influences their crystallization, and produces minerals of extreme chemical character.

Application to quartz-bearing basalts.—The application of the foregoing general considerations to the occurrence of porphyritical quartz in basalts is at once apparent. The crystallization of the quartz would seem to have been occasioned by the supersaturation of the magma through changes of pressure or temperature accompanied by the special mineralizing action of absorbed water-vapor. The rounded or corroded form of the quartzes indicates that the conditions under which they were crystallized were not the same as those under which the subsequent crystallization of the rock took place, and that they were to that extent abnormal. Reyer (loc. cit.) suggests that pressure and different degrees of saturation with absorbed water may lead to metameric processes, and also states that the development of quartz in rock magmas requires a considerable saturation of the magma with water.

Prof. Lagorio, in the paper already quoted, discusses the question of the formation of minerals in molten magmas, when they are considered as supersaturated solutions of silicates. He states that they may become supersaturated with silica, as well as with the oxides of the heavy metals and the alkalies; and that upon cooling the elements dissolved in excess crystallize out; and that in this way the concurrence of such minerals as olivine and quartz is to be explained.

Accepting the idea of supersaturation and its accompanying laws of crystallization, we still find its power to explain the phenomena of rock structures and mineral combinations limited. For all rock magmas that we have yet become acquainted with have been saturated or supersaturated solutions, whose *degree*, as well as *kind*, of supersaturation is dependent on both temperature and pressure, as well as on their chemical composition. Their kind of supersaturation, that is, the nature of the chemical compound which supersaturates the magmas, varies with the physical conditions under which the magmas exist. And the laws governing the solubility of salts under such varying conditions have not yet been ascertained, as Lagorio himself states. Thus the formation of fayalite in a rhyolitic obsidian with 75 per cent of silica and less than 2 per cent of iron oxide could scarcely be referred to supersaturation as generally understood.

We are still confronted by the fact that magmas of similar chemical composition have crystallized to rocks, which differ both in mineral composition and in structure, and which have in each case obeyed the laws governing the crystallization of saturated or supersaturated solutions. Therefore, we are forced to consider such variations of mineral combination and of structure as more especially the results of the variable physical conditions attending the consolidation of the magmas.

CONFIRMATORY OBSERVATIONS.

If the foregoing explanation, which refers the production of the quartz in these basalts to physical conditions apart from chemical ones, is correct, we should expect to find such anomalous associations of minerals in other varieties of volcanic rocks, and should not expect to find a necessary correspondence in the chemical composition of all basalts which carry porphyritical quartzes. Nor should we expect to find the quartz-bearing varieties, which are exceptional, necessarily holding a definite relation in point of age to the other volcanic rocks with which they are associated. These expectations, I think, are realized by the following observations.

Porphyritical quartz in other volcanic rocks.—The suite of rocks in the collection from New Mexico shows that similar quartz grains occur in most varieties of volcanic rocks from this region, and that their occurrence is not uniform throughout the series.

Thus in most of the rhyolites rounded or partially resorbed grains of quartz are very abundant, but in some specimens they are absent (obsidian and lithoidite). In the glassy mica-andesite, of which there is but one specimen, there are no quartz grains. In the hornblende-mica-andesites, of which there are ten different specimens, six show a considerable number of quartz grains, one shows a few, and three show none. Duplicate specimens show similar amounts of grains. In the hornblende-pyroxene-andesite, of which there are seven different specimens, one shows much quartz in grains, two considerable, one shows a few, and three show none; of the five different specimens of pyroxene-andesite, one shows a few grains of quartz, and four show none; of the twelve specimens of basalt, seven show much quartz in grains, and five show none. In other respects the specimens within each group resemble one another.

Another group of volcanic rocks, specially characterized by abundant rounded grains of quartz, is found in the vicinity of Crescent Peak, Colorado. The collection of the U. S. Geological Exploration of the fortieth parallel contains thirteen specimens from this group, which range from basalt through andesite to what is probably trachyte. They all bear rounded grains of quartz, and some of the olivine-bearing varieties also carry hornblende paramorphs, which furnish additional evidence of a change of physical condition from one which induced the crystallization of certain minerals to a later one which partially resorbed them.

In these two localities, then, it would appear that the physical conditions which are supposed to have produced the crystallization of quartz in the basalts were also imposed on the magma or magmas from which the other varieties of rock were derived.

Chemical similarity of basalts with and without quartz.—That the chemical composition of quartz-bearing basalts is not characteristic of a particular modification of rock magma will be seen from the accompanying analyses.

	I.	II.	III.	IV.	V.	VI.
SiO_2, silica	52. 57	52. 37	51. 57	52. 38	57. 25	56. 28
TiO_2, titanic acid	1. 49	1. 60	1. 43	1. 22	0. 60	0. 84
Al_2O_3, alumina	17. 68	17. 01	17. 72	18. 79	16. 45	14. 23
Fe_2O_3, ferric oxide	2. 51	1. 44	6. 24	2. 88	1. 67	4. 69
FeO, ferrous oxide	5. 00	5. 89	1. 78	4. 90	4. 72	4. 05
MnO, manganese oxide	0. 23	0. 32	0. 45	0. 18	0. 10	0. 16
CaO, lime	8. 39	7. 59	8. 82	7. 70	7. 65	7. 94
MgO, magnesia	6. 05	6. 86	4. 91	4. 91	6. 74	6. 37
BaO, barria	0. 06	0. 06	0. 16	0. 11	0. 00	....
SO, strontia	....	....	....	....	Trace.	....
K_2O, potassia	1. 58	1. 59	1. 99	1. 76	1. 57	1. 23
Na_2O, soda	4. 19	3. 51	3. 59	3. 99	3. 00	2. 98
Li_2O, lithia	....	....	....	....	0. 00	0. 01
H_2O, water	0. 82	1. 29	0. 64	0. 53	0. 40	0. 93
CO_2, carbonic acid	Trace.	0. 37	0. 58	....	....	....
SO_3, sulphuric acid	....	....	....	....	....	Trace.
P_2O_5, phosphoric acid	....	....	....	0. 56	0. 20	0. 40
Cl., chlorine	Trace.	Trace.	....	....	....	. 17
	100. 27	99. 90	99. 88	99. 91	100. 35	100. 28
O for Cl (less oxygen for chlorine)	....	....	....	....	....	. 04
						100. 24

I. Quartz-bearing basalt (70), Rio Grande Cañon, New Mexico. (L. G. Eakins.)
II. Quartz-bearing basalt (81), Rio Grande Cañon, New Mexico. (L. G. Eakins.)
III. Quartz-bearing basalt (71), Rio Grande Cañon, New Mexico. (L. G. Eakins.)
IV. Basalt without quartz (64), Rio Grande Cañon, New Mexico. (L. G. Eakins.)
V. Quartz-bearing basalt, Cinder Cone, Lassen Peak, California. (W. F. Hillebrand.)
VI. Quartzose diorite (2669), east slope of Electric Peak, Yellowstone National Park. (J. E. Whitfield.)

The first three are of three forms of quartz-bearing basalt from Rio Grande Cañon; the first is a light gray dense basalt; the second, a greenish-black dense basalt; and the third, a dark red vesicular basalt.

They have practically the same composition, with slight variations, which correspond to slightly different mineral composition. The higher oxidation of the iron in the red rock (III) is indicated by the high percentage of ferric oxide.

The fourth analysis is of a gray, dense basalt from the same locality, Rio Grande Cañon, which resembles the basalt from which the first analysis was made, except that it exhibits no quartz in either macroscopic or microscopic grains. These four are normal basalt analyses, resembling one another as closely as analyses of similar rocks ordinarily do. There are no greater differences between the analysis of the variety without quartz and those of the quartz-bearing varieties than exist between the analyses of the three quartz bearing varieties, so that the occurrence of the quartz in this instance can not be ascribed solely to the chemical composition of the magma.

Chemical differences between basalts with quartz.—The fifth analysis is that published by Mr. Diller in his paper on the quartz-bearing basalt from near Lassen Peak, California. It shows a different chemical composition for this form of quartz-bearing basalt, which is more acidic than typical basalt, and corresponds closely to some andesitic forms of volcanic rocks.

It is probable that additional analyses of other quartz-bearing basalts will show as great a variation in their chemical composition as exists between that of basalts free from quartz grains.

Different mineral development of chemically similar magmas.—The sixth analysis is presented for comparison with analysis V. It is that of a magma of very nearly the same chemical composition, slightly more basic, which has consolidated under different conditions. It may serve to illustrate two points: First, the mineralogical extremes to which chemically similar magmas may be developed. Second, the possibility that a basaltic magma existed at some previous period in a condition in which quartz might have been crystallized out. Analysis VI is of a coarse-grained quartzose diorite, perfectly fresh and unaltered, of quite recent geological age, and which is composed of plagioclase-feldspar, quartz, hornblende, biotite, pyroxene (hypersthene and augite), with accessory magnetite, apatite, and zircon. The quartz is in considerable quantity, very much more than the amount of quartz observed in quartz-bearing basalts.

For a more extended discussion of this question and a fuller description of the diorite just mentioned the reader is referred to a recent paper on The mineral composition and geological occurrence of certain igneous rocks in the Yellowstone National Park,[1] in which the writer has shown that chemically identical magmas crystallize into mineralogically different rocks under the influence of different physical conditions.

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[1] J. P. Iddings, Phil. Soc. of Washington, 1890. Bull., vol. 11, pp. 191–220.

SUMMARY.

In conclusion, the principal points brought out by this study may be briefly stated as follows:

The collection of rocks from the Tewan Mountains, New Mexico, though small, shows a gradual transition in mineral composition from rhyolites through andestic rocks to basalts.

The whole series is characterized by a variable amount of porphyritical quartz in rounded grains, which is very noticeable in some of the basalts.

These quartzes are primary secretions or crystallizations from the molten magma, and exhibit no definite relation to its chemical composition, being present in or absent from rocks of similar chemical composition.

Their production is to be referred to certain physical conditions attending some earlier period of the magma's existence.

From analogy with the occurrence of iron olivine in rhyolitic obsidian it seems probable that the formation of primary quartz in basalt took place through the influence of water-vapor while the magma was under considerable pressure.

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WASHINGTON, D. C.

WASHINGTON, D. C., *November*, 1890.

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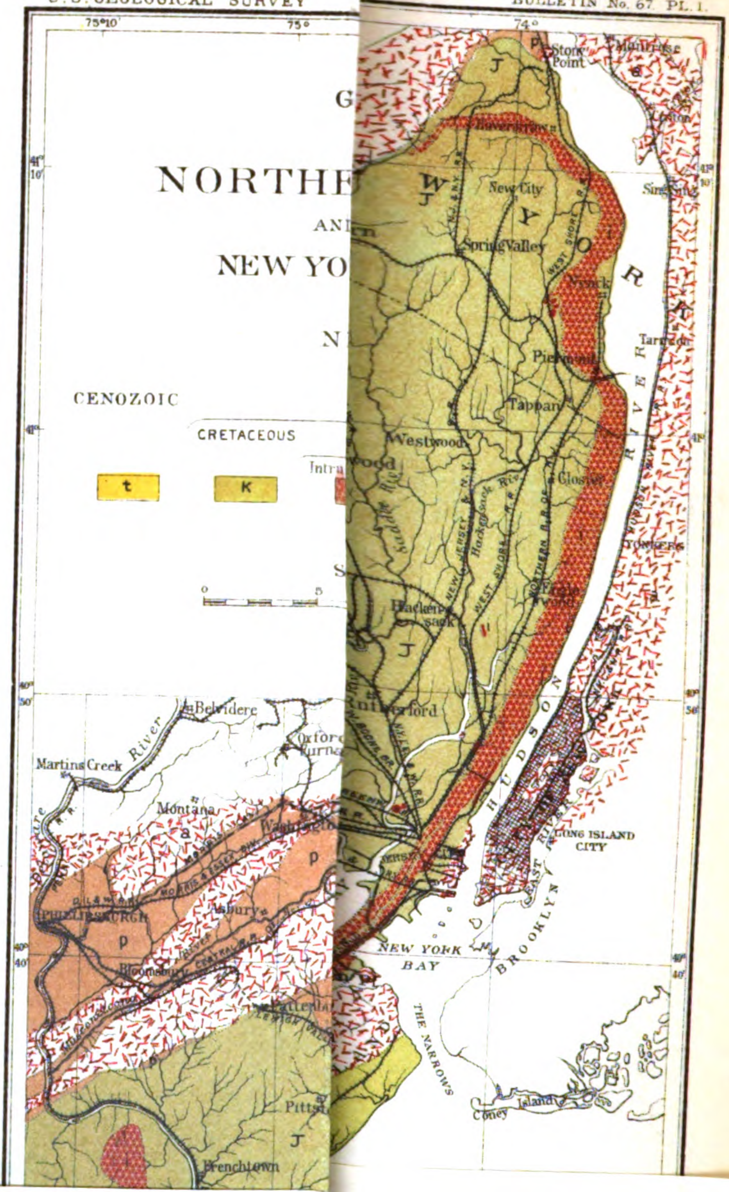

UNITED STATES GEOLOGICAL SURVEY
J. W. POWELL, DIRECTOR

THE RELATIONS
OF THE
TRAPS OF THE NEWARK SYSTEM
IN THE
NEW JERSEY REGION

BY

NELSON HORATIO DARTON

WASHINGTON
GOVERNMENT PRINTING OFFICE
1890

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LETTER OF TRANSMITTAL.

UNITED STATES GEOLOGICAL SURVEY,
APPALACHIAN DIVISION OF GEOLOGY,
Washington, D. C., April 17, 1889.

SIR: I have the honor to transmit herewith a paper by Mr. Nelson H. Darton, assistant geologist, on the relations of the traps of the Newark system in the New Jersey region to the sedimentary rocks. The field work on which the paper is based was chiefly executed as a personal enterprise previous to Mr. Darton's connection with the Geological Survey, but a few weeks were also spent in revisionary work under the auspices of the Survey.

Very respectfully, your obedient servant,

G. K. GILBERT,
Geologist in charge.

Hon. J. W. POWELL,
Director.

THE RELATIONS OF THE TRAPS OF THE NEWARK SYSTEM IN THE NEW JERSEY REGION.

BY NELSON HORATIO DARTON.

INTRODUCTION.

This contribution is a summary of the more complete results of a systematic study of the relations of the Newark system in New Jersey and New York.

In commencing field work in 1882 it was my intention to elaborate a monographic investigation of the Newark system of the eastern United States and the scope ultimately adopted involved a study of all details that might throw light on the genesis and structural relations of the formations, but owing to a variety of circumstances more or less unavoidable, the work was abandoned after several seasons of intermittent field-work extending over the entire New Jersey and New York areas.

In reviewing the results of this incomplete investigation it was found that comparatively little new light was thrown on the stratigraphy, structure, or genetic relations which would admit of generalization and only a multitude of heterogeneous details could be presented in this connection. The descriptions by Rogers, Cook, Russell, and others give an adequate general idea of the character and distribution of the sedimentary rocks, to which I could add little of special interest, but the trap masses had not as yet been described in detail, excepting in isolated localities, and it seemed probable that an account of their structural relations would prove an acceptable contribution.

In studying the structure of the formation much important information was gained, but as this was mainly in regard to the region of the trap areas, it was found possible to present it in greater part without extending the memoir beyond a description of the relations of the igneous rocks.

The traps of the New Jersey Newark region are the most prominent features in its topography, the larger masses constituting high ridges rising abruptly from the surrounding plains, and generally presenting escarpments or steep slopes eastward and gentler slopes in the opposite direction towards the dip of the inclosing strata. The more conspicuous outcrops have long attracted attention, and their igneous nature was recognized by the first observers. The first scientific description was by Pierce in 1819, but he did not express an opinion in regard to their origin, and simply termed them "greenstones." Akerly, in 1820, discussed the nature of the Palisade and Newark Mountain rocks, and although his discussion and conclusions were vague, he evidently held the opinion that they represented old lava-flows. Cooper, in 1822, described the occurrence of columnar and amygdaloidal "basalt" at the falls of the Passaic, and considered the rock of Newark Mountains, and by analogy the other trap masses of the State, to have been poured out over the sandstones; but, as suggested by Davis, he does not appear to have had in mind the possibility of intrusion. In 1836, and again in 1840, Rogers described the relations of the traps, and the actual or supposed alteration in the associated strata, and considered them intrusive and dike-like throughout.

In 1843 Mather described some of the relations of the palisade trap in New York, and called attention to the irregularities in contact and to the altered strata at its base, but considered the Palisades, and by analogy the other ridges in New Jersey, due to ancient lavas "that have flowed through rocky fissures in dikes while this portion of the continent was still beneath the waters of the ocean."

In 1846 Emmons described the relations at the base of the palisade trap at the State line, and stated that the rock was intruded in sheets in the sandstone, being the first to definitely recognize its true relations.

In the "Geology of New Jersey," 1868, Cook described the traps at considerable length, and although the structural relations are not discussed in detail, the prevailing sheet structure is recognized, and the rocks were all considered intrusive. In succeeding reports up to 1886, Cook remained unchanged in this opinion of their intrusive nature, and for the Watchung traps advanced as evidence, the occurrence of indurated shales and limestones on the back of the mountain, northwest of Plainfield (Feltville?), and their analogy in general relations to the palisade and other unquestionably intrusive traps.

Russell, in 1878, described in some detail the occurrence of what were then supposed to be intensely altered shales and limestone at Feltville and added great weight to the prevailing view that the Watchung and all the other trap masses were intrusive. In 1882 Davis visited several typical localities in the New Jersey area for the purpose of determining the nature of the traps, and while he agreed with previous observers, Emmons, Cook, Credner, and Russell, in regard to the intrusive nature of the palisade trap, he stated his conviction that the Watchung traps were extrusive and similar in relations to some of the extrusive sheets which he had studied in the Connecticut valley. He found the base of the second Watchung trap resting on apparent tuff deposits at Little Falls; the conformable base and the amygdular and ropy-surfaced rock of the first Watchung trap exposed near Paterson. At the Feltville locality he found no traces of the alteration described by Rogers, Cook, and Russell, but, on the contrary, it was seen that the vesicular, slag-like rock was overlain by unaltered shales with an intervening trap breccia at some points. This breccia alone was considered satisfactory proof of the extrusive nature of the sheet and he stated his opinion that it could only have been formed on the surface of a preexistent sheet of lava.

Studies extending over the entire Watchung area confirm Davis's suggestions, and in this memoir it will be shown that all the trap outcrops inclosed by the Watchung Mountains, and the outlying mass near New Germantown are lavas, contemporaneous with the inclosing sediments, while all the other traps described are intruded sheets and dikes.

The igneous rocks of the New Jersey region are remarkably uniform petrographically, as they are all basalts varying mainly in structure and development. The eruptives are fine grained and generally somewhat glassy, and the intrusives are coarser grained, generally being doleritic, in some cases including considerable biotite and often near gabbro in structure.

Excepting in some few special instances in this memoir, but limited reference is made to previous descriptions of general features of topography, structure, etc., as they are indicated in full in the appended bibliography, but endeavor is made to give due credit for all observations of important details or discussion of relations by giving the author's name, and if necessary the date, so that the remaining information may be readily found in the bibliography.

The accompanying colored map is not very different in a general way from the maps issued with Cook's reports for 1881 and 1882, but the base is from a tracing of the very accurate, large-scale topographic maps of the New Jersey survey, on which the field work was based and the boundaries were carefully plotted. Beside this, the map is extended into New York, the dikes and smaller masses are shown and modifications are made in the trap and border boundaries to accord with facts determined by the writer's field work. The most noticeable change in the position of the formation boundary is between Clinton and Perryville to exclude the slates which crop out prominently in the Lehigh Valley Railroad cuts and underlie the Newark rocks unconformably.

In conclusion, I have to acknowledge my obligations to those who have aided in the prosecution of the investigation. To Prof. George H. Cook, State geologist of New Jersey, I am greatly indebted for advice and aid, for without his kind help the attainment of the present results would not have been possible.

Mr. Frank Marshall Smith has served as field assistant throughout the work and his efficiency merits my warmest praise.

To Mr. J. S. Diller and to Mr. Whitman Cross I am indebted for information in regard to the petrography of the igneous rocks of the region.

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WATCHUNG TRAP SHEETS.

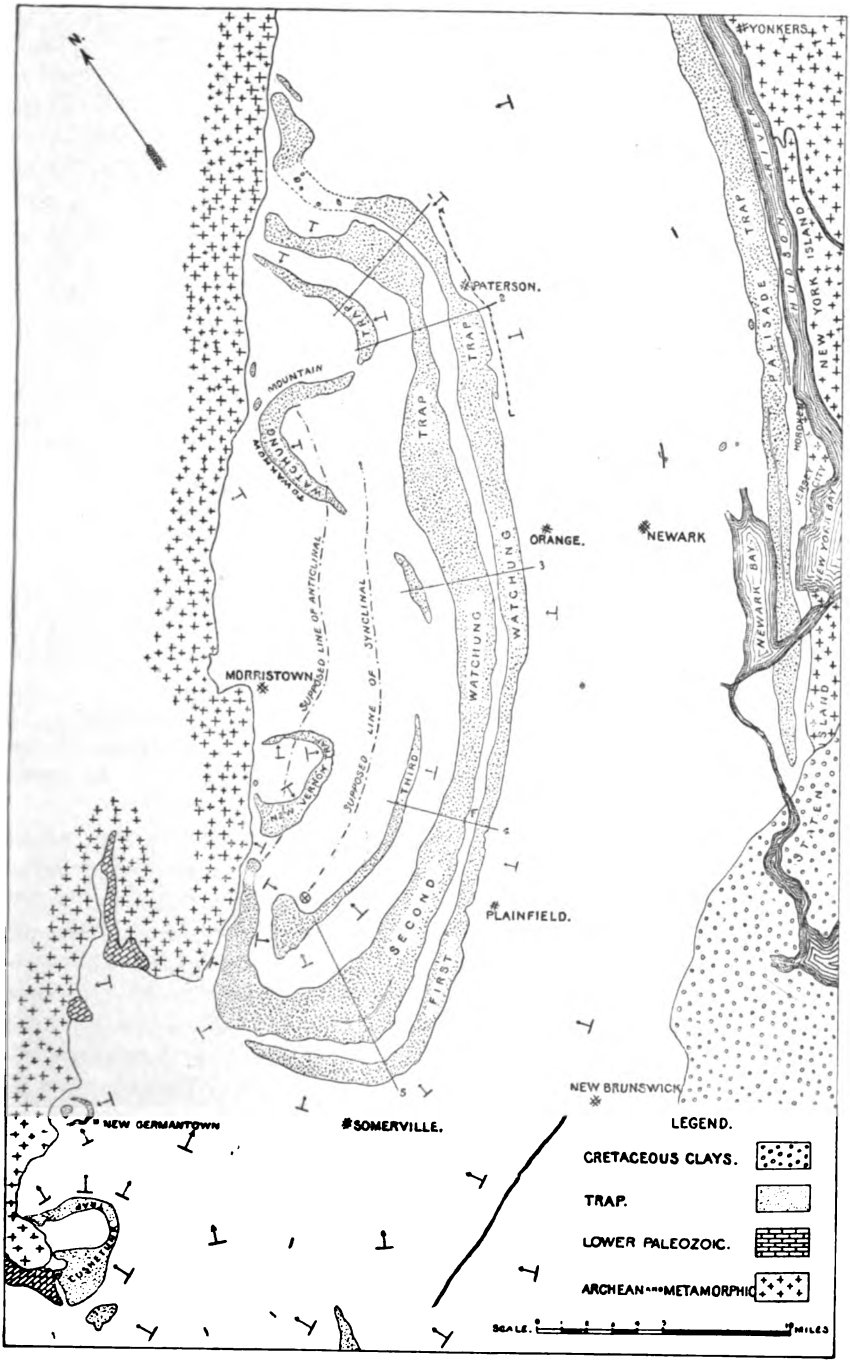
In the western half of the Newark area, in northern New Jersey, is a series of trap outcrops, of which the Watchung or Orange Mountains are the largest and most prominent. These outcrops are the edges of long, thick sheets of lava, which were successively outpoured during the deposition of the Triassic clays and muds, deeply buried in subsequent deposits and uplifted and flexed in the post-Newark deformation. Profound erosion has since removed a great thickness of these sedimentary rocks, and the outer edges of the lava sheets are now exposed, forming prominent elevations above the plains of the inclosing, softer materials. Although deeply decomposed, eroded, and glaciated, these trap sheets present all the usual evidences of contemporaneous extrusions. Their more or less vesicular bases lie conformably on unaltered or but slightly altered strata; their upper surfaces are deeply vesicular; they present evidence of successive flows in part on tuff deposits, and they are overlain by unaltered strata; in one instance with a trap breccia intervening.

STRUCTURAL RELATIONS IN THE WATCHUNG REGION.

As shown in Pl. II, the region is characterized structurally by a long, shallow, irregular trough or synclinal, prominently defined near its broad ends by the curved and recurved terminations of the Watchung Mountains.

With the exception of some narrow, marginal crumples, this is the only well marked flexure in the New Jersey area, and it materially decreases the width of the general northwest monocline of the formation nearly to the latitude of New Brunswick.

In greater part the relations of this "Watchung flexure," as it may be conveniently designated, are well defined and indicated by abundant observations. The region north of the northern termination of the First Watchung Mountain is heavily drift covered, but southward, and thence along the flanks of both Watchung ridges to their ends, sandstone outcrops are frequent, and the changes in strike easily traced. The surface west of the north and south portion of the Second Watchung Mountain is drift or marsh, excepting along the eastern side of a portion of the Third Mountain, and the details of the structure are somewhat uncertain, but the relations are not likely to be very different from those shown in Pl. II. From the narrow belt of northwesterly and westerly dips in the strata exposed along the highland border it would appear that an anticlinal begins near the southwestern termination of the Second Watchung Mountain outcrops, bears the well defined quaquaversal of the New Vernon trap, and thence extends north-northeast across the marsh and drift covered country to Towakhow Mountain. At the southern end of this ridge the shales are pitched beneath the surface, apparently by a flat anticlinal, which thence probably con-



MAP OF A PORTION OF NORTHEASTERN NEW JERSEY, SHOWING THE RELATIONS OF THE WATCHUNG TRAPS.

tinues under the marsh eastward, and by again crossing the trap sheet causes the cross ridge or east-and-west outcrops, as shown in Pl. III, and discussed in detail on a subsequent page. The axis of the Watchung synclinal is definitely determinable only where it "spoons" up near the southern hooks of the Watchung Mountains; northward its supposed course is covered by marsh and drift, but it appears to have carried the trap beneath the surface, between Riker's Hill and Towakhow Mountain, and appears to have aided in the eastern extension of the cross-ridge of the latter.

In the region southwest of the hooks of the Watchung Mountains the northeastern dips prevail for from four to six miles, irregularly and gradually giving place to the normal northwestern dips, as shown in Pl. II. Westward from north of Pluckamin to the New Germantown trap the structure is anticlinal, as shown in Fig. 11.

The stratigraphic position of the Watchung traps in the series is somewhat uncertain, but for several miles north and south from Paterson the first Watchung sheet lies on conglomeratic beds apparently at the base of the formation and separated from younger members eastward by a great fault having the course shown by K – – – L, Pl. II.

The best known exposures of these supposed basal rocks are at Paterson, as noted by Rogers and by Cook. The latter, in his report for 1882, page 36, discussed the significance of the occurrence of this shore deposit in the center of the formation as follows:

> This conglomerate points to the source of these pebbles as not very far away. Blue limestone must have furnished its pebbles. In the absence of any ledges or outcrops of the rock anywhere near Paterson, the assumption is that it has been covered by the more recent strata, and that the conglomerate deposit was not far from it. Here, then, we can not be very far from the base of the formation, one side or the other.

It has been found that these conglomeratic beds are also exposed some distance south of Paterson in front of the Great Notch, and in considerable force several miles north along Goffle Creek, west of Van Winkle's station, but the country is heavily drift covered and the relations are not readily determinable. In these exposures the conglomerates are composed in greater part of large pebbles of white, gray, and red quartzites, including bowlders up to six inches in diameter of the same material, and of limestone.

The conglomerates are separated from the base of the First Watchung Mountain by an inconsiderable thickness of sandstones and shales, and are succeeded eastward by fine grained materials which dip gently westward towards the coarser beds. At Paterson, a short distance east of the conglomeratic outcrops in the gorge of the Passaic, a well was bored 2,100 feet through fine-grained sandstone and shales, and the presence of the fault is suggested by the improbability that the conglomeratic beds, universally characterizing shore deposition in the formation, would be superimposed on or intercalated in such a great mass of fine grained materials.

The relations in the Paterson region are shown in the following figure:

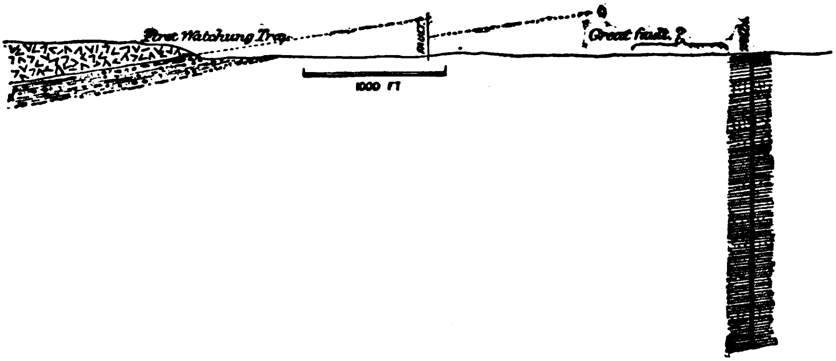


FIG. 1.—Section through Paterson, New Jersey, looking north. X, Conglomeratic beds. C, Projected position of the base of the trap sheet as exposed in the quarries half a mile south of the section line.

The extent of this hypothetical fault is not known; its probable course northward and for some distance southward is heavily drift covered and outcrops are widely separated, but in almost continuous exposures near Montclair and Orange there are no traces of either the conglomerate or the fault line.

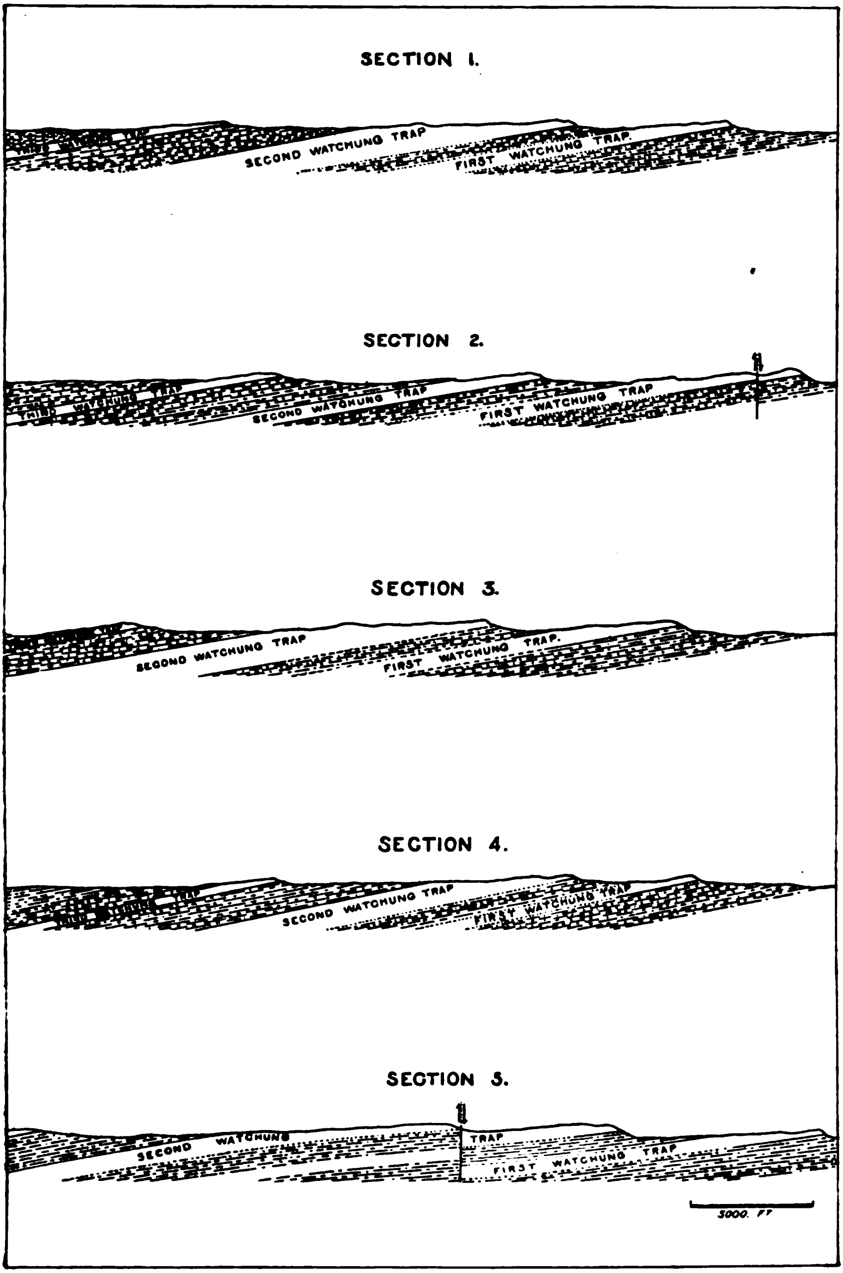
In the region of the southern hooks the base of the first Watchung trap lies on fine grained materials, apparently far above the base of the formation, and, as the sheet preserves a uniform horizon throughout, its position on the basal members northward would indicate that there was a considerable thickness of deposit southward at a time when the Paterson region was near the shore line of the formation.

MUTUAL RELATIONS OF THE WATCHUNG TRAPS.

In Pl. III are illustrated the relations of the trap sheets to each other and to the associated sedimentary rocks. It will be shown in succeeding pages that the bases of these trap sheets preserve a uniform horizon throughout, and the discrepancies in parallelism of the present position of their basal planes, as shown in the figure, are due to dislocations.

It has been suggested that the trap outcrops of the three Watchung ridges were due to a single sheet traversed by longitudinal faults bringing up the underlying strata in the intervening valleys, but this would be inconsistent with their perfectly concentric course and exact parallelism with the strike. Near each end there are unbroken, unfaulted sections from the top of the second Watchung traps to the base of the third, and throughout their course the first and second Watchung sheets are separated basally by an amount which varies so slightly as to preclude even the suggestion of dislocation.

The first and second Watchung traps are separated basally by about 1,200 feet. On section 1 the base of the first Watchung trap down the


SECTION 1.

SECTION 2.

SECTION 3.

SECTION 4.

SECTION 5.

SECTIONS ACROSS THE WATCHUNG TRAPS ALONG THE LINES SHOWN ON PLATE II.

dip is apparently 1,200 feet below the base of the second Watchung trap; on section 2, 1,400 feet; on section 3, 1,200 feet; on section 4, 1,150 feet; on section 5, 1,250 feet.

With the exception of section 2, these amounts are practically identical, as there is a considerable plus or minus error in the estimates, and the greater distance indicated in section 2 is due at least in part to known faults. Estimates at a number of points between the sections are invariably near 1,200 feet.

The distance between the present positions of the bases of the second and third Watchung traps varies considerably at the outcrops. On section 1 it amounts to 2,400 feet; on section 2, 1,900 feet; on section 3, 2,400 feet; on section 4, 2,200; on section 5, 2,700 feet. As there is no evidence that deformation has taken place between the two extrusions, these discrepancies must be due to faults in the Second Watchung Mountain area or in the valley westward, and, as will be discussed further on, there is positive evidence of a great fault crossing section 5, and bringing up underlying shales in the center of the trap area. On the line of section 2 the sheets are nearer to each other than elsewhere, and as there is no evidence of faulting in that vicinity, the distance indicated—1,900 feet—is probably very near the amount of actual difference in horizon. This estimate, then, serves as an approximate basis for the determination of the faults which give rise to the apparently greater separation on the other sections; and the thickness of the intervening sedimentary members, as shown in Fig. 2.

FIRST AND SECOND WATCHUNG TRAPS.

General relations.—These two sheets are so intimately connected in structural relations, nature, and position that they may be conveniently considered together. Their outcropping edges constitute the Watchung or Orange Mountains, and as before stated, they represent two great sheets separated by about 1,200 feet of strata, which underlie the narrow intervening valley.

The Watchung Mountains are two long, concentric, and, in places, double-crested ridges, curved at their terminations; the second or inner ridge being recurved for several miles along the highland border of the formation. The ridges are generally elevated between 300 and 400 feet above the surrounding plain country, but notches, depressions, and local elevations occasionally break their continuity of crest line. Owing to the hardness and structure of the trap, the ridges are defined to the eastward and southward by escarpments, which are flanked to a considerable elevation by the sandstones and shales on which the sheets lie. The inner sides are gentle slopes in which the trap extends down to the overlying strata in the valley or plain below. As the ridges closely approximate the trap outcrops in extent, their course and width are fully indicated in Pl. II, p. 16, and hardly need detailed description. The varying widths are due chiefly to the variations in the thickness and structure of the sheets, being narrow where the thickness is less or the dips are steeper and wider where the reverse is the case, or when the sheet is traversed by faults that depress the east side. Erosion, of course, has been an important factor in determining the width of the outcrops, but there is only one instance where a considerable variation in width is due to its agencies alone; this is at Paterson, where the ridge becomes very narrow, decreases in elevation, and is crossed by the Passaic, which falls over its eroded edge into a gorge. The wide depression at Little Falls is similar topographically, and is also traversed by the Passaic, but the trap sheet is comparatively thin in this region, and the diminution in elevation and width is only partly due to erosion. The same is the case with the only other wide depression, which is in the thinnest part of the first Watchung sheet at Millburn and at present the channel of the drainage of a very limited area.

In contour the ridges present little variety; usually the inner slopes are essentially smooth, but subordinate crests, local lines of escarpments, and rounded elevations are found upon them in some regions. The outer sides are generally very precipitous; in the Second Watchung Mountain steep, talus-covered slopes and occasional escarpments mark the edge of the trap sheet. In the First Watchung Mountain long lines of mural escarpments generally extend from a very uniform crest line to a talus and sandstone slope below and vary from only a few feet to a hundred feet in height.

The relations, boundaries, and general structure of the first and second Watchung sheets are well marked for the greater part of their course, but there are some localities in which the outcrops are obscure or lacking and the relations uncertain. At the northern termination of the First Watchung Mountain the heavy mantle of drift covers the region to such an extent that the boundaries and relations can not be definitely determined, but from the occurrence of a number of small and isolated trap outcrops in the high country in the interval, and the general structure of the region, it is thought that the trap masses of the Ramapo Valley are a continuation of the first Watchung sheet. The larger of these masses forms a ridge with a summit over 700 feet above tide-water level, and is separated from the smaller mass by a narrow valley in which some gently west-dipping strata are exposed near the Ramapo. At no other point were sedimentary rocks exposed in their vicinity, and their structure and exact extent are obscured by the heavy flanking of drift. It is possible that the smaller mass is faulted off the larger, but it may be entirely separate and due to a local extrusion.

At the southwestern termination of the Second Watchung Mountain the case is somewhat similar to the one above noted, as there is some uncertainty as to whether the small trap outcrop north of Bernardsville is continuous southward to the second Watchung sheet. The latter pitches below the surface when last seen and the intervening mile and the vicinity of the outlying mass are obscured by drift and detritus, so that no positive evidence could be obtained.

Thickness.—Faults.—The thickness and faults are two subjects which naturally come under one heading, for the estimates of thickness are based on evidence involving a consideration of the indications of dislocation.

In the following figure the thicknesses of the trap sheet and intervening sandstones are estimated from the data furnished by the sections in Pl. III, with deductions for faults indicated by the lack of parallelism in the present positions of the basal planes of the sheets at their outcrops.

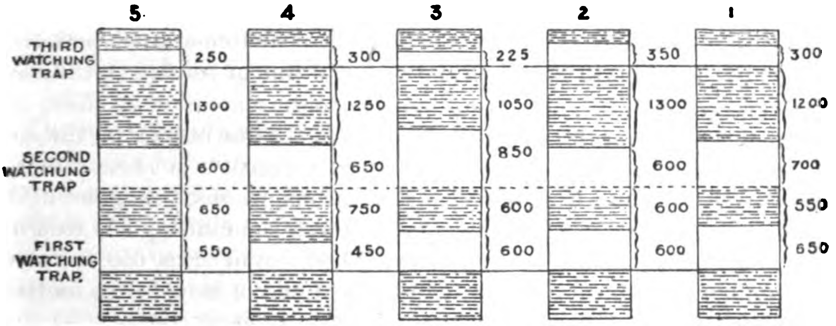


FIG. 2.—Sections illustrating the stratigraphy of the Watchung region along the section line shown in Pls. II and III.

In discussing the relations of the sheets on a preceding page it was shown that the base of the second Watchung trap was stratigraphically 1,900 feet below the third Watchung trap as indicated in section 2, and the first Watchung trap 1,200 feet below the second Watchung trap, which is the mean of allthe measurements when known faults are eliminated. The estimates of thickness of the first Watchung sheet are based mainly on cross-section measurements in which the unknown faults can not be very considerable in amount. With the case of the estimated thickness of the second Watchung sheet, however, the case is different, for the trap outcrop is wider and presents evidence of longitudinal faults in its topography, and in the varying apparent distances of its basal plane from that of the third Watchung trap, from which it was originally separated 1,900 feet throughout, if section 2 is not crossed by faults. The position and extent of the faults indicated by the discrepancies in the other sections across the Second Watchung Mountain are not known with any degree of certainty, and they may in part traverse the sandstone region westward; but in the estimates in Fig. 2 it is assumed for the sake of uniformity that they are in the trap area and uniformly downthrown on the eastern side.

On the line of section 1 the basal planes of the second and third Watchung traps are now 2,400 feet apart at their outcrops, indicating faulting in the intermediate region to the amount of 500 feet, if the original difference in horizon was 1,900 feet. If this faulting is all in the trap area the apparent 1,200 feet of trap represents a sheet approximately 700 feet thick as shown in Fig. 2. In this region the ridge presents considerable evidence of faulting, in its double crests and lines of low longitudinal escarpments presented eastward and rising from prominent joint cracks. On section 2 the trap is 600 feet thick in the narrowest portion of its course, and constitutes a low, smoothly rounded ridge, apparently not traversed by faults.

Southward from Little Falls almost to its termination the Second Watchung Mountain is more or less prominently double crested, and the more marked this feature is the greater the apparent difference in horizon at the outcrops between the base of its trap sheet and that of the third Watchung trap. In the prominent double-crested portion of the ridge in the latitude of Orange, on the line of section 3, the basal distance is 2,400 feet, indicating faulting to the amount of 500 feet; and if the dislocation is in the trap outcrop with the downthrow on the eastern side, the apparent 1,350 feet of trap represents a sheet 850 feet thick. On section 4 the double crest is inconspicuous, the apparent distance between the two trap sheets, 2,250 feet, the faulting 350 feet, and the actual thickness of the apparent 1,000 feet of trap, 650 feet. On section 5 the double crest is very prominent and clearly due to faulting, as shown in Pl. III, for red shale fragments characterize a strip of country between the crests and probably represent underlying strata brought up by the fault. Making allowance for this fault, which would amount to about 600 feet, the second and third Watchung traps are separated basally by 2,100 feet on this section, indicating faulting amounting to 200 feet, which reduces the apparent 800 feet of trap to 600 feet, on the same assumptions as before.

With the first Watchung sheet the case is different, for the estimates are less hypothetical, as cross-section exposures are frequent in which there is little or no room for faults that could not be detected, and the uniform difference in horizon of approximately 1,200 feet between the first and second Watchung traps gives a check on the results. In section 1 the dips, elevation of contact and width of outcrop give 650 feet as the thickness of the first Watchung trap, with 550 feet of overlying strata and no indications of faults. In section 2, at Garret Rock, a thickness of 800 feet is indicated, but deducting 100 feet for observed faults, the amount is reduced to 700 feet. There are also indications of another fault crossing the section in the line of escarpment and double crest which extends along the west side of the ridge from West Paterson, and is very prominent southward towards its termination near the latitude of Montclair. On section 3, at Orange, the first Watchung trap appears to be about 600 feet thick, and the ridge presents no special indications of longitudinal faults. On section 4, near Scotch Plains, the thickness is 450 feet, or considerably less than the average, and the outcrop is noticeably narrower. In the gaps at Scotch Plains, Plainfield, and Chimney Rock, fine sections are exposed across the ridge, but no evidence of faulting is presented, and the thickness is about 500 feet near Plainfield. In the Chimney Rock, section 5, the thickness is 550 feet; thence northwestward the amount increases somewhat and then gradually decreases to the termination of the outcrop.

The faults in Garret Rock, alluded to above, are finely exposed in the bluffs south of Paterson, along the Boonton Branch, Delaware, Lackawanna and Western Railroad. The two principal ones were described and figured by Davis in his paper on the Triassic Traps and Sandstones of the Eastern United States, and are shown in the accompanying Fig. 3.

The principal displacement amounts to about 70 feet, with the downthrow on the eastern side, and although the fault plane is not exposed, the beds in its immediate vicinity are not noticeably disturbed. Northward this fault is in the sandstone region east of the trap, and is not traceable, but southward its course appears to be marked by a nearly continuous line of depression, which crosses the Great Notch as a prominent break in the walls, and trending slightly eastward with increased depth, passes out of the ridge into the sandstone country eastward. The amount of dislocation in the notch is less than 150 feet, as the underlying sandstones are not brought up by it.

Columnar structure.—The outcropping edge of the first Watchung trap generally presents mural escarpments eastward in which columnar structure is more or less well defined. One of the finest exposures of columns is at the well known locality west of Orange, of which illustrations have recently received wide circulation. Iddings, in a paper on "The columnar structure in the igneous rock on Orange Mountain, New Jersey," gives a detailed description of the locality and a plate showing the entire exposure. He discusses the genesis of columnar structures in general, and shows that the large and small columns graduate into each other, and do not indicate the edges of successive sheets as suggested by Cook. He also calls attention to the similarity of the first Watchung trap to that which is poured out as a surface flow in recent times,

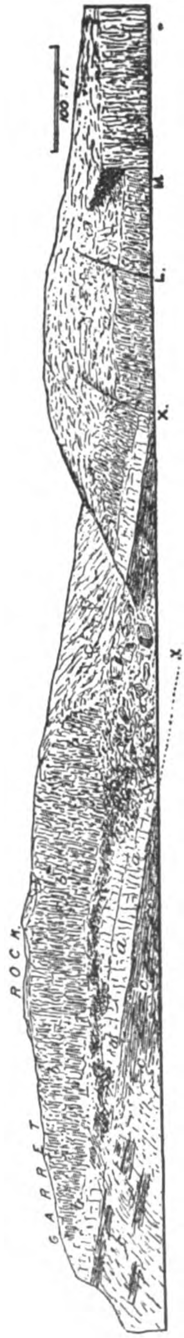


FIG. 3.—Cross-section exposure in the end of the front edge of the first Watchung trap at Garret Rock, south of Paterson, looking south. Y, fault of about 70 feet; downthrow on east side. X, fault of about 12 feet; downthrow on east side. L–M, sunken block (wedge); displacement slight. *a*, trap in large columns. *b*, trap in small columns. *c*, sandstone.

and considers its glassy nature and the disposition of its columns, "which resembles that of many lava sheets in western America," strongly indicative of extrusion.

A few miles north of the Orange columns in some quarries in the northern end of Llewellyn Park, heavily columnar trap graduating into small, radiating columns is finely exposed, and in Paterson there are many outcrops in which this feature is seen, notably at the exposure shown in Fig. 8.

Throughout its course the first Watchung trap exhibits this complex structure more or less distinctly, and on the back of the ridge and in the notch sections the small columns are frequently seen to graduate into heavily bedded rock, forming a part of the original upper surface of the sheet. The bedding is parallel to that of the sedimentary rocks inclosing the sheet, and is often quite distinct, especially on West street, Paterson, and back of Orange and Montclair.

The Second Watchung Mountain seldom presents fine instances of columnar structure, but small columns on bedded trap are finely exposed at and near the Little Falls. Generally the Second Watchung Mountain rock, like much of that of the first Watchung mass, breaks down in wedge shaped prisms and small, irregular columns, and its edge is not often marked by conspicuous escarpment.

Succession of sheets.—When the great thickness of the Watchung trap masses is considered it seems exceedingly improbable that they could represent single outflows. Throughout their extent the trap of both ridges is remarkably uniform in composition and structure, so that it is difficult to obtain evidence of successive flows.

The marked difference in prismatic structure, as described above and shown in Fig. 8, is sometimes very suggestive of successive sheets, but detailed examination has always shown a graduation from the one kind to the other, and the most striking instances of this nature at Orange and Paterson exhibit this graduation very plainly at every point. Throughout the study of the first Watchung sheet, evidence of successive flows was earnestly sought, but without success. In the Second Watchung Mountain, however, indications were found of contacts of the base of one flow with the irregular, vesicular surface of a preceding one, and three exposures were discovered; one near each end of the outcrop, the other at Little Falls. The most marked instance is in the railroad cut, just east of Bernardsville station, where the relations shown in the following figure exist:

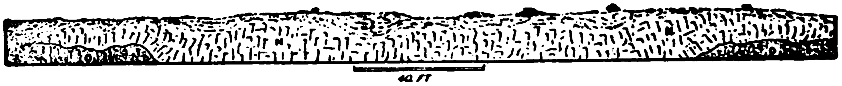


FIG. 4.—Section at Bernardsville station, showing superposition of trap at the termination of the Second Watchung Mountain. Looking southwest. Scale, 60 feet to the inch.

The lower trap is similar to the upper mineralogically, but it is somewhat darker and more crystalline, less decomposed, and less conchoidal in fracture. Near the contact it is reddish or reddish brown in color at some points, and is generally vesicular for several inches. The upper trap is a dense bluish gray rock, slightly vesicular at some points and obscurely bedded near the contact. The exact line of contact is not always well defined, and at some places the traps are separated by an inconsiderable thickness of breccia of trap-fragments imbedded in slightly altered argillaceous material. Excepting in this cut, and for a few yards in its vicinity, no other outcrops of the lower trap were recognized. It is possible that this locality exposes the vent through which the newer trap was ejected, but this could not be definitely determined.

At the northern end of the Second Watchung Mountain there is moderately good evidence of perhaps three flows. The first exposures are in the roadside along the upper end of Pompton Lake, where, at several hundred feet above the base of the sheet, there is a cross-section exposure in which a layer of vesicular trap is seen graduating downward into firm rock and is abruptly overlain by similar material apparently at the base of a succeeding sheet. Some distance farther westward vesicular rock is again exposed about 150 feet above the first, and it is similarly succeeded by firm rock, which thence extends to the overlying sandstone a short distance westward. The following section is in part ideal, and it is not by any means certain that the outlined relations actually exist in their entirety.

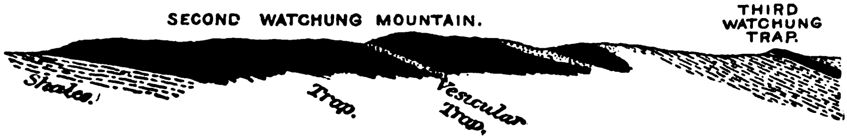


FIG. 5.—Section along road on southeastern shore of Pompton Lake, showing position of vesicular beds in the second Watchung trap. Looking southwest.

At Little Falls a succession of flows is indicated by an irregular, horizontal streak of vesicular rock, also noted by Davis, which is interbedded in massive and columnar trap just above the canal crossing and about 150 feet above the base of the sheet. At some points this streak appears to include some fragmental materials, but the evidences in this regard are not positive. The exposure is a short one and somewhat obscure, and no contact line could be detected, but the occurrence is suggestive of the vesicular surface of one sheet overlain by the base of a succeeding one.

The surface of the trap sheets and their contact relations with the inclosing strata.—In their vesicular and altered surfaces and relations to the inclosing strata the Watchung traps present conclusive evidence of their extrusion, not locally as suggested by Cook, but throughout their entire extent. Although the western slopes of the ridges are in most places deeply eroded, decomposed, or drift-covered, there are many localities in which vesicular or slag-like rock still remains, and near Feltville the irregular, vesicular surface of the first Watchung trap is exposed, overlain by unaltered red shale, separated from the volcanic rock at some points by a trap breccia. In their relations to the underlying strata, the Watchung traps present none of the characteristic features of the palisade sheet, but the more or less altered trap lies with perfect conformity upon practically unaltered, undisturbed shales, and at the same horizon throughout.

The Feltville locality is in a small ravine, across the creek, a short distance northeast of the village and exposes a cross-section for 200 yards along the original trap surface, and through overlying strata on the western slope of the First Watchung Mountain. Owing to the peculiar manner in which some of the trap in this exposure is altered, it was thought for many years to be highly indurated shale, indicative of the intrusive nature of the first Watchung sheet, and in the introduction an account is given of the controversy which this has occasioned. In Rogers's description, report for 1840, page 134, it is stated that the shales and intercalated limestone bed were greatly disturbed and altered by the trap, and Russell in his paper on "The Intrusive Nature of the Triassic Trap Sheets of New Jersey," describes the locality in considerable detail, calling attention to the vesicularity of some of the trap and its rounded slaggy surface, but mistaking its highly altered variety for indurated shale. In several reports Cook alludes to the locality as one exhibiting the contact of the trap and highly altered shales, and appears to consider the breccia a metamorphic product, but he does not give a detailed description of the exposure. In his paper on the "Triassic Traps and Sandstones of the Eastern United States," Davis gives an account of a hurried visit to the locality, in which the unaltered shales are stated to extend down to the vesicular trap surface excepting where a trap breccia intervenes. He considers the occurrence of this breccia strong evidence that the Watchung traps are extrusive, "as it is difficult to understand how it would have been formed except on the surface of a preexistent sheet of lava."

Before making detailed studies of the relations of the Watchung traps, I held the same opinion in regard to the Feltville locality as Russell and Cook, but after the appearance of Davis's paper a microscopic examination was made by Mr. J. S. Diller of the so-called altered shales, and they were found to be highly altered diabase, greatly decomposed, but presenting unquestionable evidence of its igneous nature. In this way it was easy to understand Russell's very natural error, and the significance of Davis's conclusions were for the first time appreciated.

In the following figure (Fig. 6) the more general relations of the Feltville section are shown and the position of the locality is indicated by F on Pl. II, p. 16.

Excepting in the vicinity of X the uneroded trap surface consists of smooth, low bosses, two or three feet in diameter, sheathed by an inch or two of enamel-like, ropy surfaced, light colored, fine grained diabase. This sheathing is generally filled with shot-like masses of calcite and it graduates downward sometimes into firm or columnar trap, but generally into vesicular rock, often filled with elongated, radial vesicles. In places these bosses are separated from each other by reticulating bands of chloritic matter or decomposed trap an inch or two in width, and extending downward for several inches. Along the southern side of the gorge, at X, the trap surface loses its bossy contour for some distance and becomes a mass of irregular, partly separated, ragged fragments similar to the Aa of the Sandwich Island lavas, as described by Dutton and others. It is at intervals in this portion of the section that the breccia occurs, filling the insterstices and capping the rough surface, as shown in a general way in Fig. 6, and no traces of the rock were found at other points. The breccia consists of masses of more or less vesicular trap of all sizes, from that of a bushel basket down, in a matrix of soft, bright red shale deposit and small fragments of decomposed trap. The greatest development of the breccia is at the so-called "copper mine," where the thickness is eight feet, and it is exposed, graduating upward into the red shales which form the upper two-thirds of the walls of the lower half of the ravine and which are elsewhere frequently exposed down to the trap surface without intervening breccia. Generally these shales are bright red in color, but in the vicinity of Y they are intermixed with trap sand and are so darkened by it that their contact with the underlying brownish red, highly altered trap is hardly recognizable to a casual observer.

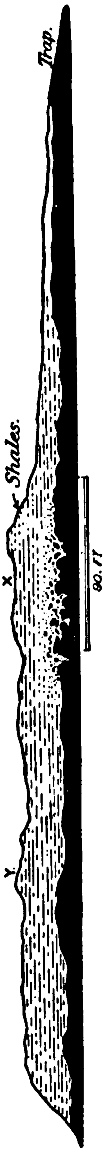


Fig. 6.—Section showing relations of surface of first Watchung trap and its contact with overlying strata along south side of gorge just northeast of Feltville, New Jersey. Looking south.

At the foot of the ravine, and thence southward for many miles down the valley between the First and Second Watchung Mountains the vesicular trap surface and unaltered shales are frequently exposed very near together, but not in contact. Northwest of Plainfield, near the Stony Brook gorge, the trap surface outcrops in the road-side, and the alteration has at some points progressed until the deeply vesicular diabase is almost entirely converted into a bright emerald green mixture of chlorite and serpentine. Two and one-half miles farther southwest, at an old copper mine, near the hamlet of Warrenville, a shaft sunk through the overlying shales penetrated the surface of the first Watchung trap for some distance, but the openings are now filled with water, and nothing could be learned of the relations excepting from the heaps of excavated rocks in the vicinity. The fragments of trap found in these heaps are of an olive green rock with abundant vesicles filled with shot-like masses of calcite, and apparently having an enamel-like surface composed of darker, fine grained, more vesicular material. No traces of intervening breccia were found, and the overlying shales are carbonaceous and sparingly impregnated with malachite, azurite, calcite, and coal, but otherwise unaltered.

Four miles west of Bound Brook, near Martinsville, there is an old opening for copper at which the surface of the first Watchung sheet is exposed, and four miles farther northwest, near Pluckamin, there is another similar locality. In both of these instances the trap was very vesicular and has undergone considerable alteration to chloritic and serpentinous material.

Northward from Feltville, in the glacial drift region, the trap is either glaciated down to the bottom of the valley, or heavily flanked with debris, and although the unaltered, undisturbed, overlying strata are exposed very near the contact at the latitude of Orange, and four miles north of Paterson, the relations at the immediate juncture could not be determined. There is, however, a fine exposure of the vesicular surface of the first Watchung trap in the excavations at the lower end of the Orange waterworks, where the vesicularity extends at least ten feet below the somewhat eroded surface, and the zeolite-filled vesicles often attain an inch or two in diameter.

West and southwest of Paterson the surface of the first Watchung trap has a globulitic, rusty fracture, and is frequently vesicular. Along the Passaic, near the Delaware, Lackawanna and Western Railroad bridge, there is an exposure described by Davis, in which the trap surface is bossy and slag-like, similar to that which predominates in the Feltville ravine, and the rock in the vicinity is vesicular at some outcrops.

Four miles north of the western part of Paterson there is an exposure at the base of High Mountain, in which the shales outcrop within fifteen feet of the first Watchung trap, and about four feet above it vertically. There is no perceptible alteration or disturbance of any kind in the soft argillaceous shales, and the somewhat eroded trap surface presents no traces of vesicularity.

The surface and inner side of the Second Watchung Mountain are more obscured by drift and other detritus than is the case with the First Watchung Mountain, and there are no outcrops of overlying strata near the trap, and fewer localities of vesicularity. In its southwesternmost outcrops and the outlier near Bernardsville vesicular trap is exposed in places, and at the latitude of Montclair the deeply glaciated rock on the western slope of the mountain contains some large quartzitic amygdules, but it is not until Paterson is reached that a vesicular surface is conspicuously exposed. Thence northward at many points the decomposed surface rock is deeply vesicular over wide areas, a feature which is especially noticeable near the northern termination of the mountain towards Pompton Lake.

The base of the first Watchung trap is exposed at a number of localities, notably at Paterson and near Somerville, but also in the copper mines in the gorges northwest of Plainfield and Bound Brook. In all the instances observed the trap is considerably altered, more subject to decomposition than that of the main mass of the sheet, and lies upon unaltered, or very slightly altered, undisturbed shales along a straight or slightly sinuous line. In the copper mines, three miles north of Somerville, the slightly undulating contact plane is exposed over a considerable area by the mining operations, and the relations are finely exhibited. The trap is considerably altered near the contact, and is sparingly vesicular at some points and slag-like at others.

The sandstones are slightly darkened near the trap and impregnated with copper compounds, the results of chemical deposition not necessarily connected with heat. The upper layers are generally slightly flexed to conform to the undulating surface of the trap, and at one point in the mine there is an intervening breccia from half an inch to an inch in thickness, composed of trap fragments imbedded in a matrix of essentially unaltered shaly material. The relations of this singular breccia are shown in the following figure (Fig. 7), and it is thought that its trap fragments were derived by some means from the edge of the advancing trap sheet and then overflowed by it:

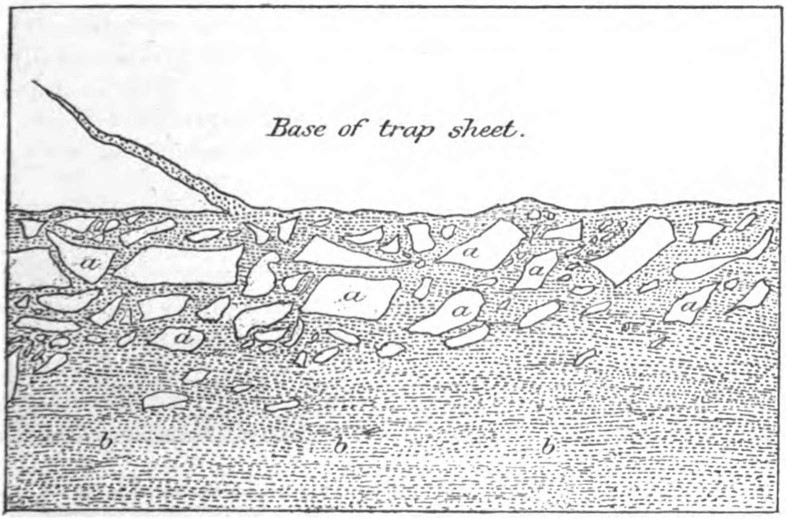


FIG. 7.—Section of breccia immediately below base of first Watchung trap in American Copper Mine near Somerville, New Jersey. *a*, trap fragments; *b*, sedimentary matter. ¾ nat. size.

In Chimney Rock gorge, northwest of Bound Brook, and in Stony Brook gorge, northwest of Plainfield, openings for copper ore exposed the contacts for some distance, but the workings were not accessible at the time of my visit. Other exposures in their vicinity exhibit the contact along a gently undulating line similar to that in the American Copper Mine above alluded to. Northward from south of Orange to Paterson the entirely unaltered shales and sandstones are exposed at many points along the side of the mountain very near the trap, and perfect conformity exists.

At Paterson there are fine exposures in Garret Rock, in the several sandstone quarries, in the railroad cut behind Barber's mills, and at places in the gorge of the Passaic in which the trap extends down to a sharp contact line without showing conspicuous change in color or texture except occasional vesicles and slightly finer grain or a smaller conchoidal fracture. On the south side of the gorge of the Passaic, just below the falls, there is the exposure shown in the following figure (Fig. 8), in which the contact is very finely exhibited for over a hundred yards:

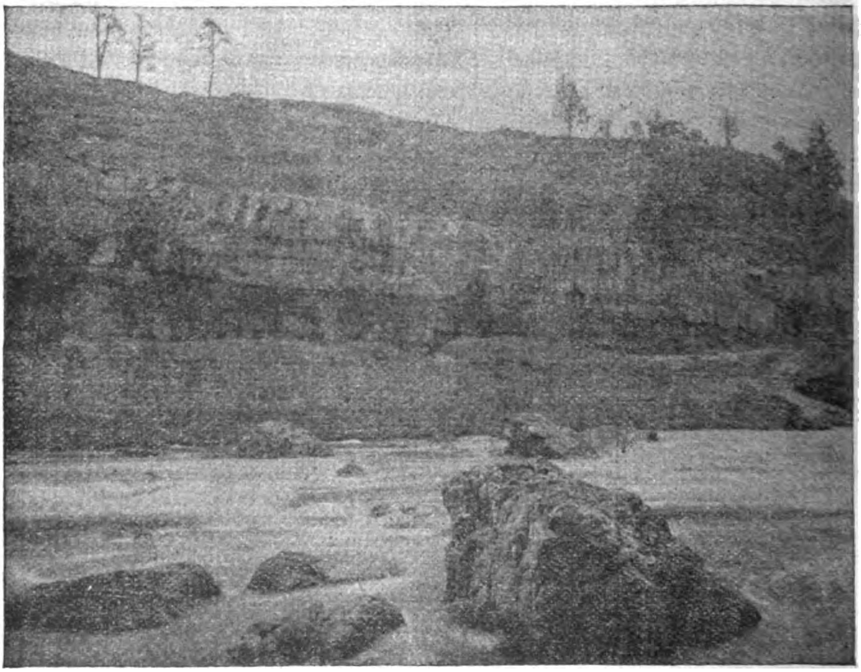


FIG. 8.—Cross-section exposure of edge of first Watchung trap lying on sandstones on the south side of Passaic River, just below the Great Falls, Paterson, looking south. From a photograph.

In this exposure the line of contact is almost perfectly straight throughout, the trap lying upon moderately argillaceous sandstones slightly flexed and darkened at some points, and in places containing cavities apparently due to the weathering out of infiltered minerals. The trap is generally slightly vesicular near the contact and in irregular bands for some distance above, and to the right of Fig. 8 it is altered to a light flesh colored, vesicular rock which occurs at intervals for several yards.

Only two exposures of the base of the second Watchung trap are known, and both afford very satisfactory exhibitions of the contact relations. Some features of the exposures along the Passaic and in the quarries opposite Little Falls were described by Rogers and by Davis, and the other localities are in the quarries near Haledon, two miles north of the western part of Paterson. The finest exposure showing the relations of the trap to the sandstones at Little Falls is the one shown in the following figure (Fig. 9) at the quarry of the Little Falls Brownstone Company:

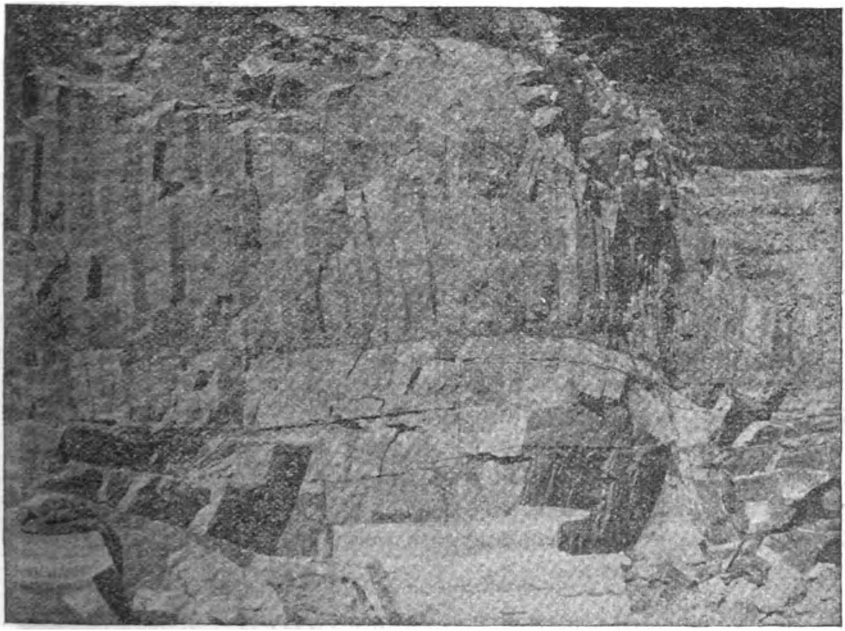


Fig. 9.—Contact of second Watchung trap with underlying sandstones in quarry on north side of the Passaic River below Little Falls. From a photograph.

In the vicinity of this exposure neither the trap nor the sandstones are noticeably altered in texture or in color, and the contact is along a perfectly horizontal line, but westward near the falls and farther eastward down the Passaic, the base of the sheet appears to have overflowed some beds of scoria and tuff. In the outcrops just below the falls on the north side of the Passaic the firm columnar trap at first is intercalated with and then it graduates downward into vesicular and apparently scoriaceous rock, but the exposures are obscure and the exact relations uncertain. A half mile below the falls on the same side of the river there is an exposure of the edge of the sheet in which the relations shown in the following figure (Fig. 10) appear to exist.

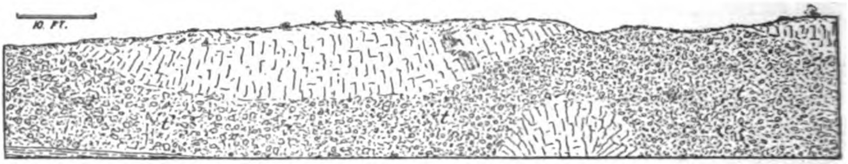


FIG. 10.—Supposed tuff and scoria beds overlain and penetrated by the columnar trap at the edge of the second Watchung sheet on the north side of the Passaic River, half a mile below Little Falls, looking northwest. From a photograph.

The fragmental beds consist of a loose, heterogeneous mixture of vesicular fragments of all sizes and fine grained decomposed tufaceous and ashy materials, all so much decomposed as to render the specific identification difficult. The columnar trap appears to graduate into this bed at the contact, but it appears probable that here we have an anterior fragmentary deposit overflowed and penetrated by lava flows in the manner shown in the figure, in which the features are somewhat accentuated.

Northward from this locality for many miles the drift and talus hide the base of the sheet, and the extent of this supposed fragmental deposit is unknown. The Haledon exposures are in two adjoining sandstone quarries, a mile and a half north of Haledon. In the northernmost of these quarries the columnar trap is vesicular at some points near the contact and includes masses and streaks of chloritic matter in which rounded and angular masses of vesicular trap are imbedded. In the other quarry a couple of hundred yards away the firm, hard columnar trap of the ridge comes down to the unaltered sandstones at some points, but it generally lies on from 10 to 20 feet of a heterogeneous deposit of fragmental material similar in nature and relations to that below the Little Falls, cemented into a breccia by zeolitic, quartzitic, and calcic impregnations.

THIRD WATCHUNG TRAP.

General relations.—The outcropping edge of this sheet constitutes a line of single crested ridges known as Packanack Mountain, Towakhow Mountain, Riker's Hill, and Long Hill, which are shown on Pl. II as trap-covered areas a short distance west of the inner slopes of the Second Watchung Mountain. These ridges are narrow, seldom exceeding half a mile in width, and, although similar to them topographically, are much less prominent and rugged than the Watchung Mountains. Through much of their course they present a steep side eastward, but escarpments are infrequent, low, and irregular, and the line of contact with the underlying sandstone is generally not far below the crest line. The inner slopes are trappean and gentle. The ridges ordinarily attain an elevation of about 200 feet above the surrounding plains, but occasionally somewhat more. Owing to the comparatively inconsiderable thickness of the sheet, slight changes in its thickness, extent, or structure cause breaks in the continuity of its outcrops or considerable deflections in its course, such as are not found in the larger Watchung masses.

The most notable of these deflections is the bowing in the line of outcrop in Towakhow Mountain. The curved course of this ridge is apparently due to a very low anticlinal, or crumple, trending and gently declining northwestward and crossing the sheet in the angle formed by the change in trend. There is a gradual change of dip approaching this corner from the south, and although in the east-and-west or cross-ridge the trap extends down to country level, and the regions north and south are drift and marsh covered, the evidence seems ample that its course is due to flexure. In the north-and-south ridge the sandstone extends up nearly to the crest, dipping about ten degrees to the northwestward conformably under the trap.

The cross ridge terminates in a few miles at a low, wide, marsh and drift-filled gap, through which the Pequannock River crosses the sheet. East of this gap the trap outcrops constitute a curved ridge, which thence extends parallel to the strike and gradually sinks below the drift plain near Pompton. Towards the southern termination of the Towakhow Mountain the sandstone outcrops finally cease and the trap sheet pitches beneath the surface in the gap towards Riker's Hill, apparently passing over the southward extension of the anticlinal to which the cross-ridge is due. The trap in Riker's Hill rises gradually from the plain country, either by slight flexure or by increase in thickness of the sheet, and is a thin capping of trap on gently west dipping shales, which extend nearly to its crest. Long Hill is similarly constituted, and at its southern termination the trap is spread out in the spoon of the Watchung synclinal to cover an ill defined but considerably greater area than shown on the map of the New Jersey Geological Survey.

North of the corner of the Towakhow Mountain there are two poorly exposed outlying outcrops of trap near the highland border, and it seems probable that they are part of the third Watchung trap separated by erosion or continuous under the surface in the interval.

Thickness.—The thickness of the third Watchung trap is somewhat variable, but as its outcrops do not appear to be traversed by faults the amount may be satisfactorily estimated at a number of localities. The sheet gradually rises out of the glacial lake beds near Pompton, and in the deep gorge of the Ramapo River, a half mile south, has a thickness of at least 215 feet. Five miles farther south the amount is near 400 feet, and in Towakhow Mountain near 450 feet in the north-and-south ridge, and at least as much in the cross ridge. In Riker's Hill the thickness is between 200 and 250 feet, but in Long Hill the average is near 250 feet, and at some points it may be 275 feet. (See also Fig. 2.)

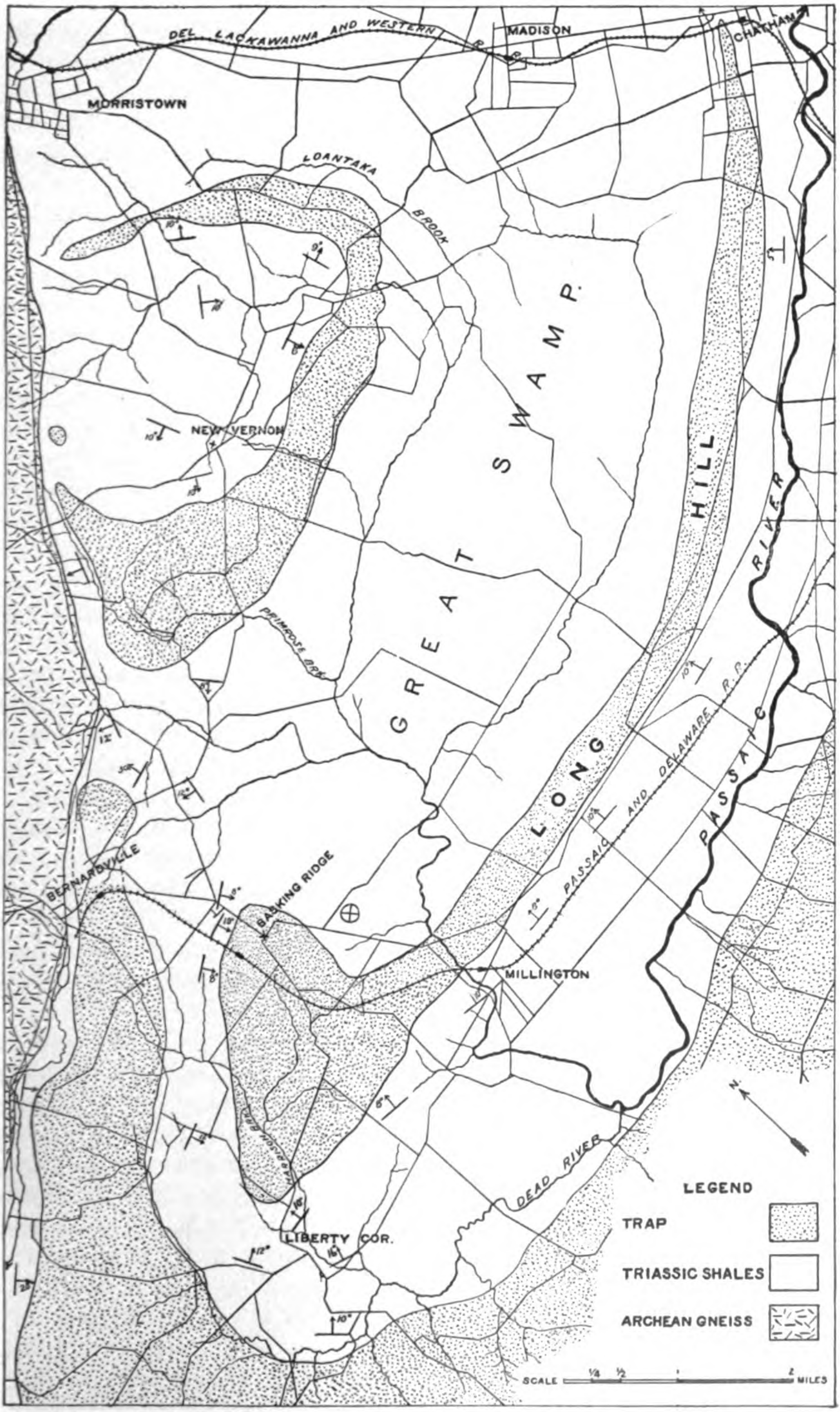
Rock structure.—The third Watchung trap is a fine grained rock, similar in every respect to that of the other Watchung ridges. Its structure is seldom columnar, and ordinarily it breaks down into wedge shaped masses of small size. Although the upper surface of the sheet is deeply decomposed and eroded southward, and bears indications of severe glaciation northward, some vesicular rock still remains. This is an especially noticeable feature near the latitude of Paterson, but is also seen north of Millington, and in the southern hook.

Relations to the associated sedimentary rocks.—Although the third Watchung trap is only seen in contact with underlying strata near its northern and southern terminations, and contacts with overlying strata are not exposed, there is ample evidence to prove that it is an extrusive sheet. The underlying contacts present precisely the same features as those of the other Watchung traps, and at other localities the strata frequently seen very near the trap are entirely unaltered and are conformably overlain by the sheet, the course of which is primarily determined by their flexures. Beginning at the south the shales are often exposed near the trap, and in the gorge at Millington the contact is finely exhibited for several yards. In this exposure the slightly vesicular, decomposed base of the sheet is a sinuous line, perfectly conformable to the bedding of the shales. The latter are entirely unaltered, excepting slight local increases in hardness, and although there is no disturbance in the bedding, some of the layers of shale are slightly bent, distorted, and indistinct for a short distance from the contact. Northward from Millington the sandstones and shales extend along the eastern face of Long Hill and Riker's Hill and the southern part of Towakhow Mountain, sometimes very near the trap, but not exposed in contact. In the gorge of the Ramapo, near Pompton, about a mile south of the northern end of the ridge, there is a fine exposure in which the trap is seen lying on calcareous conglomerate dipping conformably to the southwestward. The exact line of contact is not exposed, but a few inches from it the trap is firm and dense, and the calcareous rock entirely unaltered.

No exposures of contact with overlying strata are known, and in most cases the nearest outcrops on the inner slopes are at a considerable distance from the trap. A mile north of Millington, on the road to Basking Ridge, there are some very argillaceous shales, which at one point outcrop within five or six feet of the surface of the sheet, and do not present the slightest signs of alteration. A mile southeast of Basking Ridge there is another exposure of unaltered shales near the trap, but the exact distance from contact can not be ascertained.

NEW VERNON TRAP.

Three miles northwest of Long Hill, and separated from it by the Great Marsh, is a semicircular trap outcrop which extends to within a few rods of the border of the formation. It is the edge of a lava sheet



MAP OF THE REGION ADJACENT TO THE NEW VERNON TRAP, LONG HILL, AND THE INNER SIDE OF THE TERMINAL HOOK OF THE SECOND WATCHUNG MOUNTAIN.

outcropping up the sides of an irregular quaquaversal, and may be either the attenuated western extension of the third or second Watchung sheets brought to the surface by flexure, or a local extrusion. In Pl. II, the general relations of this outcrop to the others is indicated, and in Pl. IV its structural and areal relations are shown.

With the exception of a couple of narrow drainage gaps the main outcrop line of the sheet is marked by a ridge about 200 feet in height and with a width somewhat greater than that of the trap outcrop.

In contour the ridge is not as steep and rugged as the Watchung Mountains and its steeper inner slope is not marked by escarpments. The ridge is single-crested northward, but towards its southern termination it is divided into knobs and subordinate ridges. The southernmost outcrop is in a small, isolated knoll, and is apparently separated on the surface, although possibly continuous with the main mass under ground. The New Vernon trap is a fine grained rock, very much decomposed superficially, but notably vesicular and slaglike in places on its surface, and very similar on the whole to the rocks of the Watchung ridges. The thickness of the sheet is between 150 and 200 feet, and becomes very slight in the northwesternmost outcrop. There is every evidence that the sheet is perfectly conformable to the sedimentary rocks throughout. The underlying sandstones and shales flank the inner side of the ridge, and, as shown in Pl. IV, their strike is closely parallel to its trend. Outcrops near the trap are infrequent, but in the one or two instances observed there were no traces of alteration. The only exposures of overlying beds are some distance southward, along and near the Passaic River, where the unaltered shales dip as shown in Pl. IV. Southwest of these exposures, to the second and third Watchung traps, the strikes vary from west to northwest, so that the relative stratigraphic position of the New Vernon trap could not be exactly determined; but it is probably connected with either the one or the other eastward under the Great Swamp, or southward below the surface.

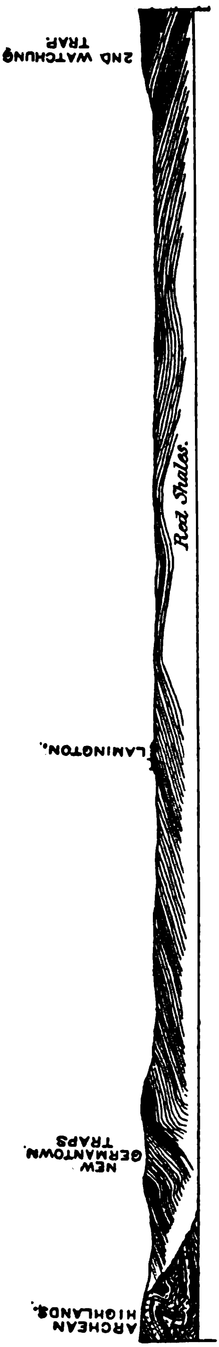


FIG. 11.—Section from west of New Germantown to the crest of the Second Watchung Mountain northeast of Pluckamin, looking north. Scale, 2 miles to the inch.

NEW GERMANTOWN TRAP.

Lying near the border of the formation west of New Germantown, seven miles west of the hooks of the Watchung Mountains, there are two small trap outcrops which are similar to the Watchung traps in their relations, and possibly an extension of these flows; for, as shown in Fig. 11, the intervening country is anticlinal in structure, and, if no faults traverse it, the traps on either side are at approximately the same horizon.

The New Germantown trap outcrops constitute a semicircular ridge inclosing a prominent central knoll, as shown in Fig. 12.

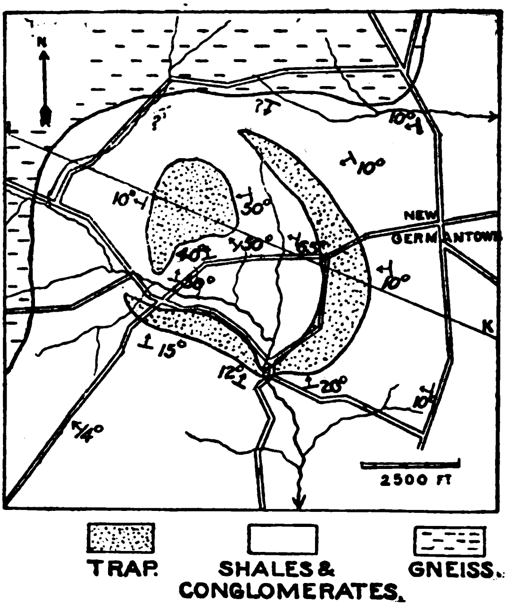


FIG. 12.—Map of the New Germantown trap region.
L —— K, line of section shown in Fig. 11.

The outer ridge consists of a trap sheet lying conformably between unaltered shales with its curved course determined by a shallow trough or partial centroclinal having the relations shown in the figure. The trap presents its steeper face to the east and south and its outcrops terminate by the thinning out of the edges of the sheet. At greatest its thickness is about 250 feet. The sheet is exposed in cross-section along North Rockaway Creek, but at no point is it seen in actual contact with the inclosing strata, although there are outcrops at some points very near the trap in which the shales are entirely unaltered and undisturbed in bedding.

The central knoll is abrupt and high, but its surface and slopes are so covered with trap fragments that its structural relations are not entirely determinable. The dips in the adjoining strata indicate the structure shown in Fig. 11, and from the absence of alteration in the beds it seems improbable that the trap mass is a dike or intrusive sheet.

The trap of both the curved ridge and the knoll is fine grained rock, similar to most of that of the Watchung Mountains, and although vesicularity was not observed in the deeply decomposed and eroded surface of the sheet, and contacts with inclosing strata were not seen, there seems little doubt that the rock was extruded contemporaneously with the deposition of the sedimentary members of the formation.

PALISADE TRAP.

General relations.—This great mass of intruded diabase forms one of the most conspicuous and best known topographic features in New Jersey. Its comparatively narrow outcrop extends as a high ridge with palisadal front for thirty miles along the western side of the Hudson River from New York Bay to Haverstraw, and thence around a huge hooked course to the Highlands.

The palisade trap above the present surface is in greater part a thick sheet, which was intruded up the west-dipping strata from a dike which follows at or near the western flank of the outcrop. This dike-and-sheet structure is best exposed in the railroad cuts and tunnels across the ridge at Weehawken and near Haverstraw, and is shown in the sections in Figs. 13 and 14, viz:

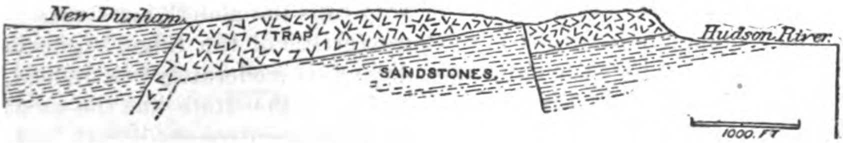


FIG. 13.—Section showing the structure of the palisade trap along the line of the West Shore Railroad in the tunnel and cuts west of Weehawken, New Jersey, looking north.

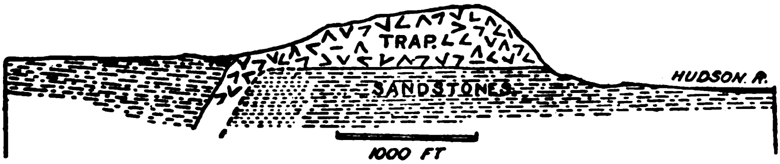


FIG. 14.—Section similar to preceding, but three miles south of Haverstraw, New York, looking west.

For many miles along the Hudson River the base of the sheet is frequently exposed, and while it preserves a practically uniform horizon near the base of the formation, many local irregularities are seen in which the trap crosses underlying strata laterally up or down, in some instances for over a hundred feet. In the hook extending from Haverstraw westward the sheet ascends in the formation by successive steps, and at its northwesternmost outcrop at the Highland border presents some evidence of having been extruded.

Beginning at the south the palisade trap is first found in wells near the Fresh Kills, on Staten Island, but it soon comes to the surface and constitutes a hill extending to the Kill von Kull. On Bergen Point the outcrop is inconspicuous for some miles, but finally develops into a ridge which gradually increases in elevation northward and is characterized by an escarpment on its eastern side. This ridge reaches the Hudson River at Weehawken and thence continues northward with palisadal front to the State line, its elevation increasing in the interval from 225 to 550 feet.

In Rockland County, New York, the topography of the ridge becomes somewhat irregular, a deep notch crossing it at Piermont, north of which it rapidly increases in elevation and width. Near Nyack the elevation decreases, and towards Rockland Lake the ridge becomes very narrow for a short distance. Thence northward the Hook Mountain is a high, rough, single crested ridge, bearing the abrupt knobs or increased elevation known as the High Torne, 1,008 feet above tide and the Low Torne, 900 feet above tide. Towards its termination the ridge gradually decreases in altitude, and is crossed by a wide depression extending down to country level near the line of the New Jersey and New York Rairoad.

In contour the Palisade Mountain and its prolongations is generally a single crested or slightly corrugated ridge, with gentle western slopes, often flanked by overlying strata, and with an escarpment eastward in which^a greater or less thickness of trap caps the underlying strata.

The columnar wall, which is so characteristic of the ridge, begins in Jersey City, and for some miles the columns are moderately well defined, but along the Hudson River from Fort Lee to the State line the great even crested wall at the edge of the sheet is a continuous line of huge columns extending down for three to four hundred feet to the steep talus along the river. The following figure (Fig. 15) gives a general

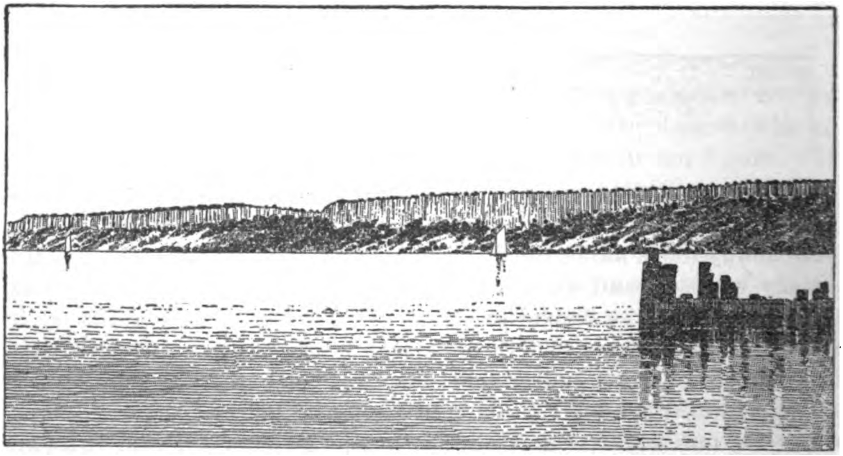


FIG. 15.—The Palisades of the Hudson opposite Hastings, New York. From a photograph.

idea of the evenness of the crest line and escarpment, but very inadequately represents the grandeur and prominence of the exposure.

The palisade trap is remarkably uniform in constitution, and although its texture varies somewhat, it is a normal, almost glassless diabase throughout. Near its contact with the inclosing sediments it is fine grained, sometimes for a considerable distance, and different portions of the sheet vary somewhat in texture, but the predominating rock is a moderately coarse grained, dense gray rock in which the constituent minerals may be discerned. Immediately at its northwestern termination, the surface of the sheet is vesicular for a few rods of its course, and the rock is very similar to that of the Watchung flows. Otherwise it is unlike the fine grained, glassy, extrusive rocks, and at no other point presents the slightest vesicularity.

So far as known the palisade trap sheet is the result of a single intrusion, continuous from beginning to end, but it may possibly be connected under ground with the smaller posterior sheet at Granton, and it is undoubtedly the source of the several small sheets which are intruded in the immediately underlying strata at Weehawken, King's Point, and near Haverstraw.

There is some probability that the palisade trap reappears southward in the Lawrence Brook trap, which is along the extension of its projected line of outcrop. The interval between the Staten Island outcrops and those at Lawrence Brook is mostly covered by cretaceous clays under which the Newark is known to extend for some distance, and it is possible that the trap continues southward and is similarly overlapped. The small trap masses near New Brunswick occur in this region, and in Cook's report for 1882, page 59, reference is made to a belt of indurated shales found in excavations in the Raritan River, a little below Martin's Dock, which may indicate the presence of the extension of the palisade trap. Union Hill, just northeast of Sufferns, may also be an extension from the edge of the palisade trap, but the intervening region is drift-covered, and the relations are uncertain.

Structural relations in the palisade region.—The palisade trap is not flexed to any great extent, and although there are in its area a number of topographic and structural features suggestive of dislocation, only two well defined faults were found.

In its course along the Hudson River nearly to Haverstraw the sheet lies on strata dipping gently westwardly and striking parallel to the general trend of the ridge. Local variations in direction and amount of dip are not unusual, but their influence is in most cases confined to increasing or decreasing the elevation of the contact line in the face of the cliff, although in some cases causing slight deflections in the trend of crest line. The increased width of the ridge near Nyack is in part due to the thickening of the trap, but the dips in that region are very low and aid in widening the outcrop. North of the State line the strata are inclined due west in most instances, and the average trend of the ridge is north for over 10 miles. Near Haverstraw the great hooked outcrop begins, and its structural relations are somewhat complicated. The

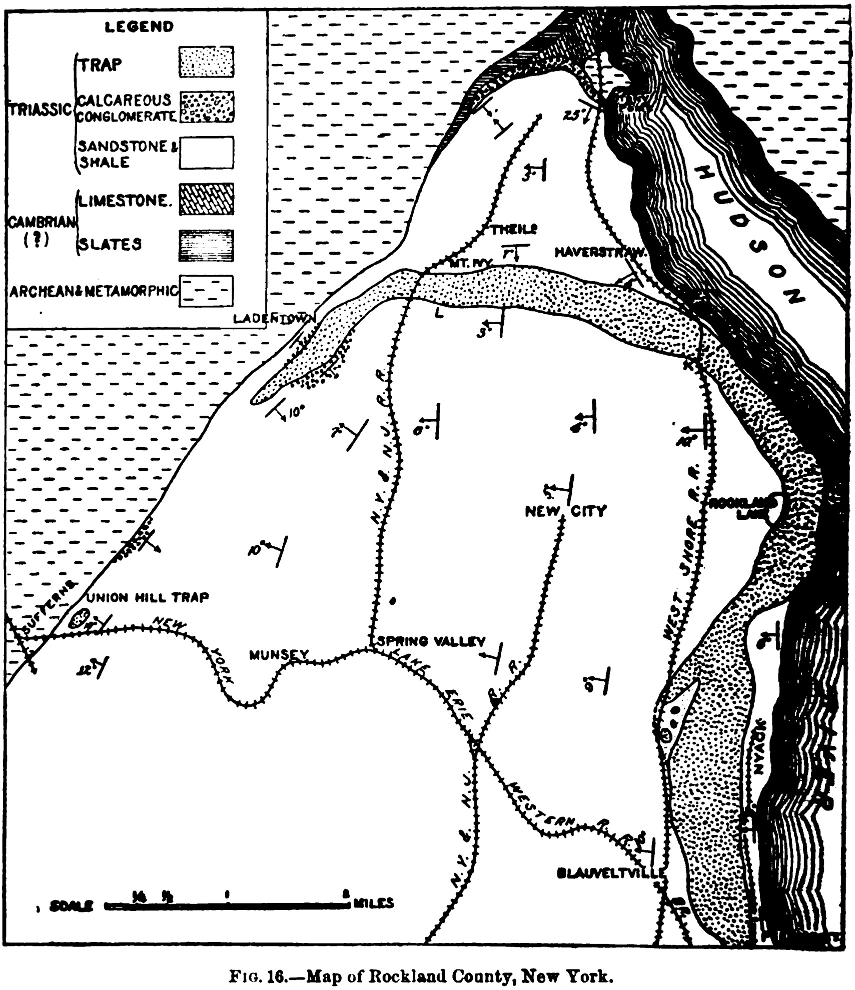


FIG. 16.—Map of Rockland County, New York.

similar great hooks of the Watchung Mountains, it will be remembered, are due entirely to flexures, but in this instance the structure of the associated strata facilitates the curved outcrop but is not its principal cause. Primarily the hooked outcrop is determined in greater part by a gradual deflection in the course of the dike from north and south, finally to due east and west, but at the same time the base of the sheet ascends laterally westward several hundred feet. If this was not the case the sheet would be carried below the present surface by the inclination of the gently west dipping monocline into which it was intruded. These changes in elevation in the sheet may possibly be due to or aided in greater or less part by two faults, the presence of which is suggested by the topography of the Long Clove and the Short Clove. These two deep gaps cross the ridge near Haverstraw, in the very region where the principal changes in position are effected.

The dike structure is plainly exposed in the inner side of the hook from L to K, being finely exhibited in the railroad cut at K, as shown in Fig. 26. Elsewhere its presence is indicated by the steeper inclination of the trap slopes than that of the adjacent strata frequently exposed in its vicinity, although in some part, at least, the appearance may be due to faulting. On the outer side of the ridge along the Hudson River, southeast of Haverstraw, the dips are very gently to the westward in most cases, but southwestern dips occur occasionally. South of Haverstraw the west-southwest dips are general, and it is here that the face of the sheet is either intruded upward across the edges of the strata in several step-like irregularities or is faulted so as to preserve a considerable elevation in the bluff notwithstanding the tendency of the dip to carry it downward. West of Haverstraw there are no outcrops near the trap until on the road-side near Theils, where, as shown in the map, some pebbly conglomerates dip gently southward. In the region northwest of Haverstraw the shales dip at very low angles to the west and north, and near the Highland border the calcareous conglomerates are involved in a shallow synclinal which extends southward and crosses the palisade trap west of L in a wide depression through which the New Jersey and New York Railroad passes. The recurved course of the termination of the trap outcrop is due to this syncline, which is well defined near Ladentown, where its relations are as shown in Fig. 17.

The horizon held by the sheet at its southwestern termination is not far from the top of the formation, which in this region has no great thickness.

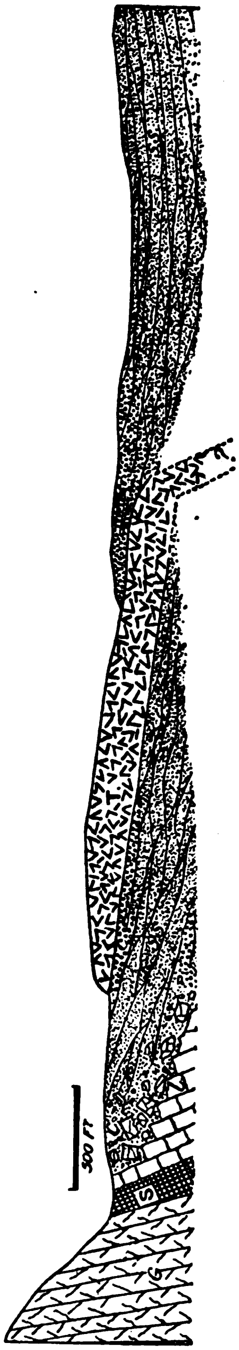


FIG. 17. Cross-section near Ladentown, New York. T, Palisade trap. C, calcareous conglomerate. L, cambrian (?) limestone. S, slates. G, gneiss. SS, sandstones and pebble conglomerates. Looking north.

Faults.—Wherever the palisade trap is exposed in cross-section it appears to be traversed by small faults which offset its horizontal joint planes, and there are several longitudinal depressions and subordinate escarpments on the Palisade Mountain which are possibly due to dislocation. In studying the palisade trap it was soon discovered that a longitudinal fault extended along Bergen Hill from Bergen Point through Jersey City heights to the latitude of Hoboken, and another was found in the ravine behind King's Point north of Hoboken extending to and across the West Shore Railroad tunnel, as shown in Figs. 13 and 19.

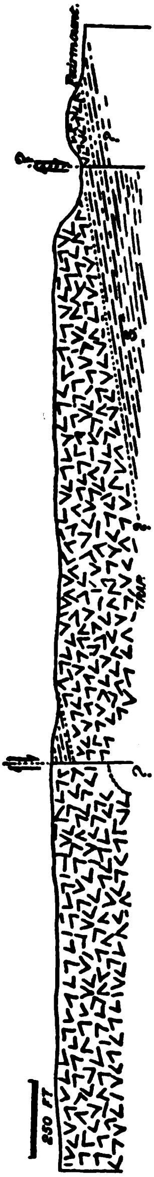


FIG. 18.—Section across the palisade trap in Bergen Hill, Jersey City. S, sandstone. Looking north.

The first indications of the Bergen Hill fault, as it may be conveniently designated, are in Bayonne City, on Bergen Point, where a narrow strip of sandstone is obscurely exposed, extending along the center of the trap outcrop and apparently protected from erosion by the fault scarp. Southward from this exposure a strip of red soil extends for several miles, and northward a depression soon begins which crosses the Morris Canal cut as a break in the continuity of the trap walls. At the next section across the hill, in the cut of the Newark and New York Railroad, the line of fault is indicated by a wider and deeper break in the walls than at the canal, while in the cuts of the Pennsylvania Railroad the break is 700 feet in width, and was found to be underlain by thinly bedded sandstones dipping towards the trap wall on the western side. Cook, in the Geology of New Jersey and on the accompanying map, called attention to the occurrence of the sandstones in the Pennsylvania Railroad cut; and again, on the map of 1874, sections are given in which the trap of Bergen Hill is represented as two sheets separated by sedimentary beds. Russell, in his paper on Hudson County, concurs in this opinion, but Davis, in his paper on the Triassic trap and sandstones of the eastern United States, suggests that the sandstones may owe their presence to a fault similar to the one in Garret Rock.

A half mile north of the Pennsylvania Railroad cut, in the two tunnels, the line of fault is marked by a narrow belt of greatly disturbed and decomposed trap, and a short distance north of the tunnels thinly bedded sandstones were found near the surface in excavating for the reservoir. Thence northward for several miles there are indications of the continuance of a debris-filled depression, but the termination of the fault could not be located. The amount of the dislocation is not known, as it has simply brought down some of the overlying strata on the eastern side, so as to be protected from erosion by the fault scarp of hard rock, and the absence of outcrops of inclosing strata on either side of the trap sheet renders the exact relations undeterminable. The foregoing section (Fig. 18) shows the position and nature of the fault in the Pennsylvania Railroad cut.

The absence of sandstones in the tunnel sections is ample proof that the trap is not in two sheets separated by a layer of sandstones, and that the amount of the fault is not sufficient to bring up the underlying strata. On the above figure are also shown the supposed relations of a small trap outlier in Jersey City, locally known as Fairmount. Its length is only a few hundred yards, and it is completely separated from Bergen Hill by tide marsh. Russell, in his paper on Hudson County, suggests that it is due to a local anterior intrusion from the palisade trap mass, but it is now better exposed for study, and appears to be part of the edge of the main trap sheet separated by a fault, as shown in the figure.

A short distance north of Hoboken the prominent King's Point is at the southern termination of an anterior trap ridge, which thence extends for several miles northward, and finally coalesces with the main ridge. The intervening depression holds the little Awiehawken Creek which rises near Guttenberg, flows through a marsh-filled depression for some distance, and thence down a narrow and deep ravine to empty into the Hudson just below King's Point. In his memoir on Hudson County, Russell appears to consider this anterior ridge due to the change of horizon of the base of the trap, which takes place at its southern end, or to its bifurcation; and Davis, in his paper on the triassic traps and sandstones, page 270, suggests that it is due in part to the resistance to erosion offered by an increased thickness of the trap sheet, possibly aided by a fault similar to the one at Garret Rock, Paterson. The finding of shales in the ravine back of the ridge, and in the tunnel below the marsh-filled depression, affords an entirely satisfactory explanation of the structural relations which are shown in Fig. 19, and also in Fig. 13, p. 37.

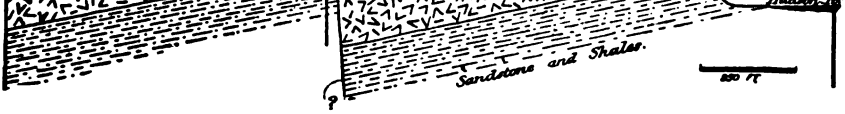


FIG. 19.—Cross-section north of Weehawken, New Jersey, at H - - - C. on Fig. 21, looking north.

The strata in the ravine are continuous with those underlying the main ridge southward, which are observed to abut against the trap of the back of the anterior ridge, and in the tunnel two miles farther north the same relations exist. In the ravine at W, Fig. 19, a well was driven 125 feet into the indurated shales without meeting trap, which is ample proof that bifurcation or longitudinal change of horizon has not taken place. The extent of this fault is not known beyond the limits shown in Fig. 21; southward it may pass either east or west of the serpentine of Castle Hill, Hoboken, but northward it probably dies out towards Guttenberg. Near Piermont there are some suggestions of a fault diagonally from southwest to northeast with downthrow on the eastern side, but its presence could not be established.

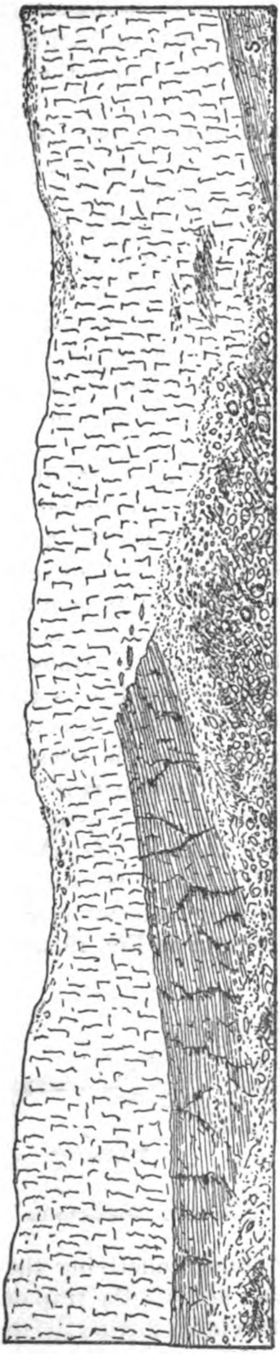


FIG. 20.—Lateral descent of base of palisade trap across edges of strata north of Hoboken, New Jersey, looking northwest. Scale, 150 feet to an inch. From a photograph.

In the great hook farther north, near Haverstraw, the ridge is crossed by two depressions, the "Long Clove" and the "Short Clove," of which the topographic configuration suggests dislocation, but no positive evidence of faulting could be obtained.

Thickness.—There are few localities in which the thickness of the palisade trap sheet may be satisfactorily estimated, for there is a continual possibility of longitudinal faults, and when the dike structure extends to the country level more or less of the upper part of the sheet has been removed by erosion. Bearing in mind the Bergen Hill fault and supposing the underlying sandstones to be at tide-water level with a gentle dip westward, which no doubt is approximately the case, the thickness of the sheet at the latitude of Bergen Hill would be about 300 feet. Near Weehawken, as shown in the tunnel section, Fig. 13, p. 37, the sheet is apparently 400 feet in thickness and the amount appears to gradually increase to about 700 feet near the State line. Near Piermont there is a considerable decrease for a short distance, and then an increase to 800 or 850 feet, but as the entire surface of the sheet is exposed to erosion in this region the thickness was greater originally. In the Hook Mountain the thickness is probably near 600 feet on the average, but varies, and there is not less than 850 feet of trap in the escarpment at High Torne. Farther westward the thickness gradually decreases, and it is not over 200 feet at Ladentown and about 30 feet at the terminal outcrop.

Relations to underlying strata.—Exposures of the base of the palisade trap are frequent along the Hudson River from north of Hoboken to Haverstraw and many details of its relations are exhibited. The sedimentary rocks at the contact are generally the argillaceous shales overlying the basal arkose, and they are in most cases greatly increased in hardness and darkened in color for many feet from the trap. The two rocks are always welded together along the contact, although the line of junction is frequently weathered out, owing to an increased tendency to decomposition which exists at the contact in some localities. Descending plates and dikes of trap are of comparatively frequent occurrence and slight irregularities, in which the trap breaks across the ragged edges of the strata for a short distance are found in nearly every exposure.

The first outcrops of underlying strata are north of Hoboken, where the contact line gradually rises above tide-level, and is entirely conformable to the stratification of the highly altered shales. Owing to the dip of the strata and the trend of the outcrop, a considerable altitude in

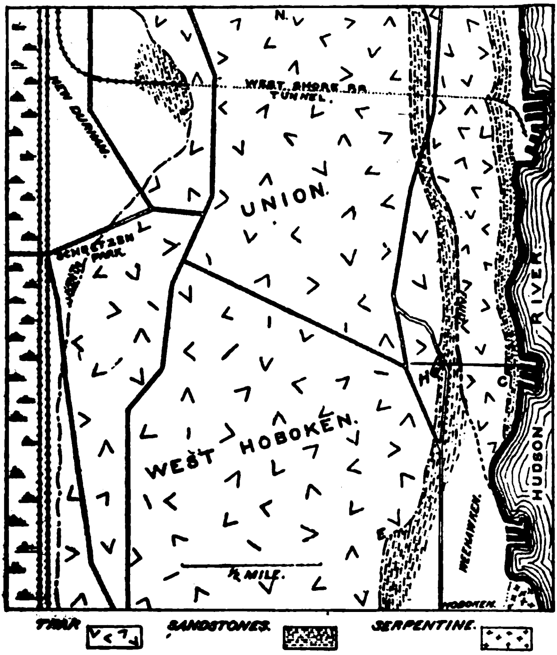


FIG. 21.—Map showing the relations of the palisade trap north and northeast of Hoboken, New Jersey.

the cliff is soon attained, when, as also noted by Russell, the trap breaks abruptly across their edges and descends about 180 feet, as shown in Fig. 20 at the locality indicated by E in Fig. 21.

The cross-contact is an exceedingly ragged one, the trap penetrating the shattered edges of the shales and including some of their great proof that bifurcation or longitudinal change of horizon has not taken place. The extent of this fault is not known beyond the limits shown in Fig. 21; southward it may pass either east or west of the serpentine of Castle Hill, Hoboken, but northward it probably dies out towards Guttenberg. Near Piermont there are some suggestions of a fault diagonally from southwest to northeast with downthrow on the eastern side, but its presence could not be established.

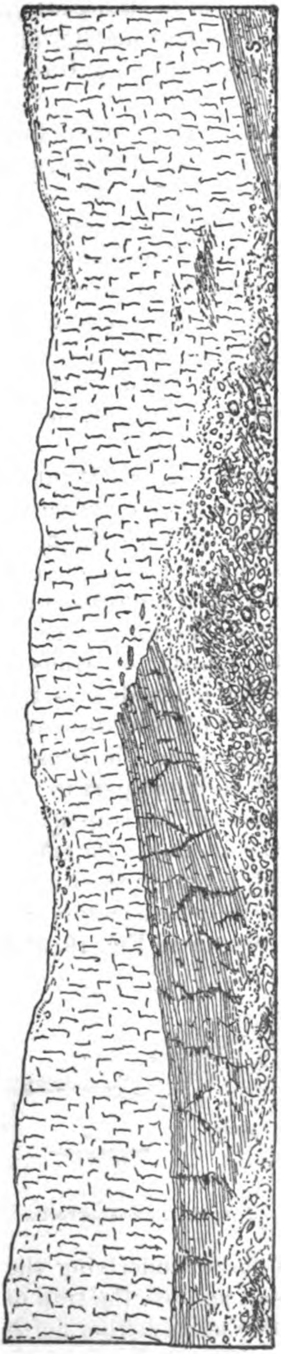


FIG. 20.—Lateral descent of base of palisade trap across edges of strata north of Hoboken, New Jersey, looking northwest. Scale, 150 feet to an inch. From a photograph.

In the great hook farther north, near Haverstraw, the ridge is crossed by two depressions, the "Long Clove" and the "Short Clove," of which the topographic configuration suggests dislocation, but no positive evidence of faulting could be obtained.

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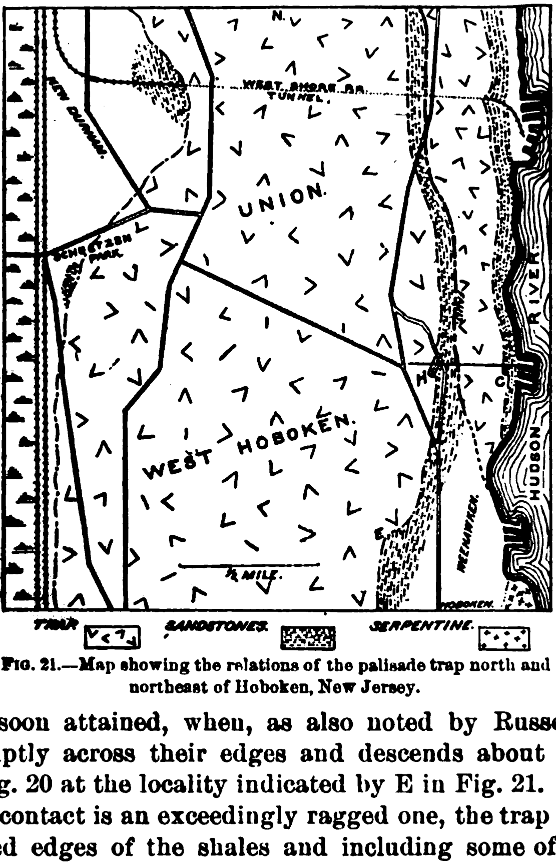


Fig. 21.—Map showing the relations of the palisade trap north and northeast of Hoboken, New Jersey.

the cliff is soon attained, when, as also noted by Russell, the trap breaks abruptly across their edges and descends about 180 feet, as shown in Fig. 20 at the locality indicated by E in Fig. 21.

The cross-contact is an exceedingly ragged one, the trap penetrating the shattered edges of the shales and including some of their great fragments for some distance. Owing to the increased thickness of the harder rock, the escarpment advances eastward for several hundred feet, forming the bluff on which the "observatory" is built. At the southeastern corner of this bluff the underlying strata again emerge from below the surface, as shown in the right-hand corner of Fig. 20, and are thence exposed for some distance northward. Around the eastern side of the bluff to the "100 Steps" the trap lies on the arkose along an irregular contact plane, one of the most noticeable irregularities of which is exposed along the road below the "100 Steps." This arkose is slightly altered to a hard gray rock near the contact, and a short distance south of the "100 Steps" it is penetrated for a few yards by a trap sheet five feet below the main mass and about a foot in thickness.

North of the "100 Steps" the ravine described on page 43 extends up into the ridge, and the line of escarpment offsets to the shore of the Hudson River at the prominent headland of King's Point (at C on Fig. 21).

At the southern end of this point the bluffs are trap from base to summit, but a few rods northward the base of the sheet comes up from tide water level, below which it was carried by the fault described on page 43, and crosses the strata as shown in Pl. V.

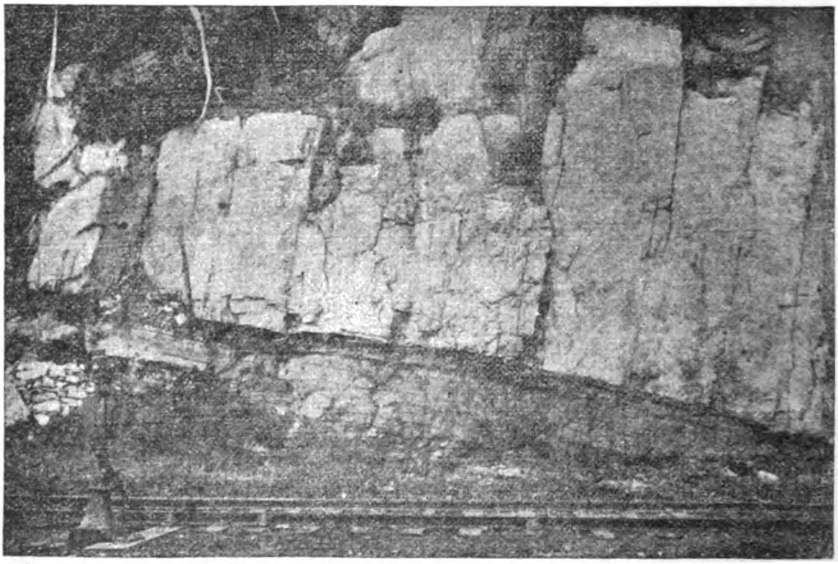
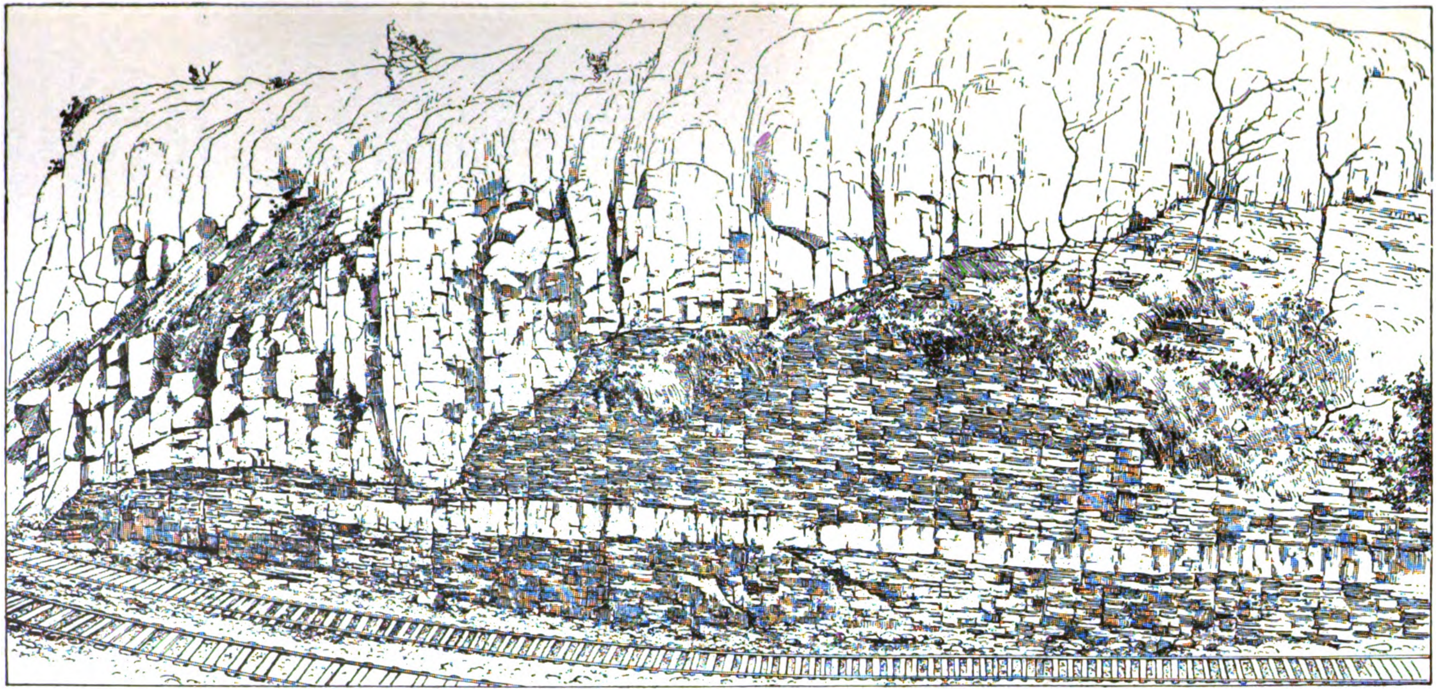


FIG. 22.—Contact of trap and indurated shales in entrance to West Shore Railroad tunnel, Weehawken, New Jersey. Looking south. From a photograph.

In this ascent the trap ascends to approximately the horizon at which it was first observed below the "observatory," and this relation is apparently preserved for many miles northward. As the ascent is lateral to the course of the trap it probably extends into the ridge for some



LATERAL ASCENT OF BASE OF PALISADE TRAP ACROSS EDGES OF STRATA IN KING'S POINT, WEEHAWKEN, NEW JERSEY, LOOKING WEST.

From panoramic photograph.

distance, and on the west side of the fault, in the ravine, there are some indications of its presence, but the exact relations are not exposed.

The unconformity at King's Point is described and figured by Russell 1880, Cook 1882, and Davis 1883, and Russell suggested that it might be due to bifurcation of the mass in which an anterior sheet had extended eastward, but the ascent is entirely lateral and the well boring near the fault referred to on page 43 shows that no bifurcation has taken place.

The small trap sheet shown in Pl. V is an offshoot from the main mass, and extends for about half a mile northward, preserving a uniform horizon throughout, with the exception of some slight local irregularities.

At the eastern entrance to the West Shore Railroad tunnel, two miles north of King's Point, there is a fine cross-section exposure, showing the relations of the trap to the underlying strata, as shown in Fig. 22.

Northward from the tunnel for some distance outcrops are infrequent, but the line of contact appears to remain essentially unchanged in position until near Guttenberg, where there are some indications of either a slight fault or a change of horizon. The relations at this point are not determinable on account of the drift and debris, and a slight local decrease in dip may be the cause of the apparent irregularity.

In the road below the quarries of Guttenberg there is a dike in the arkose underlying the trap, exposed as shown in the following figure:

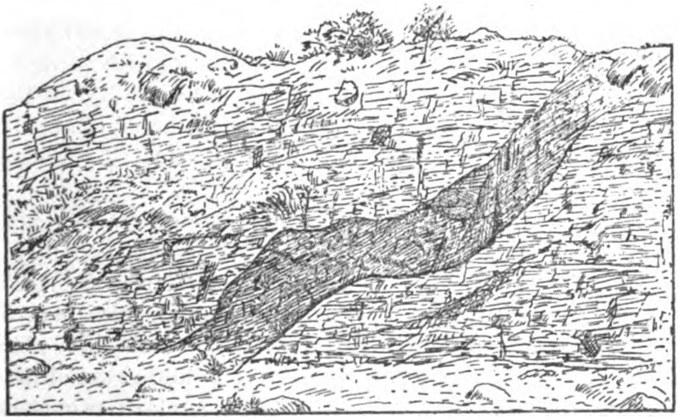


FIG. 23.—Dike in arkose below the quarries at Guttenberg, New Jersey. Looking northwest. From a photograph

This dike appears to be connected with the palisade trap, and is a precisely similar rock, but whether it is an ascending dike or an offshoot from the trap above is not known.

At Fort Lee landing there is a break in the continuity of the crestline, a shallow depression extends up into the ridge, and the line of escarpment offsets several rods to the eastward to form the "Bluff" which marks the beginning of the palisadal front, thence extending northward uninterruptedly beyond the State line. Near the lower end of the depression behind the "Bluff" there is an obscure exposure in the road-side, in which the trap breaks down across the edges of the intensely indurated shales and the base of the sheet in the "Bluff" is apparently about 75 feet below the horizon, which it held southward. It seems probable that in this instance there is a descent of the trap laterally across the edges of the shales for some distance, as in the King's Point exposure, for there are no indications of a fault in the depression, and the dip remains unchanged throughout in the exposures below along the river.

From the bluff northward to the State line there are numerous exposures of the contact and its vicinity, but there is no evidence of noteworthy irregularity. Near Sneden's Landing, a mile north of the State line, a change in trend of the ridge to due north brings the contact line to tide-water level, and the underlying strata are not exposed again until at Piermont where they reappear conformably underlying the trap. Just south of the village the base of the sheet appears to have ascended across the strata for some distance, but the exposures are obscure and some local changes of dip or a small fault may cause the apparent change in position.

In the road just above Upper Piermont the base of the sheet is exposed for some distance and sends a small offshoot obliquely downward and outward into the sandstone for twenty or thirty feet. Another similar occurrence of this kind is exposed in a quarry behind Haverstraw, where two small offshoots extend obliquely into the underlying strata and terminate by thinning out. From Piermont northward for some distance the contact is high above the river, but near Nyack the strike gradually attains a direction west of the trend of the ridge, and although outcrops near the contact are not exposed for two miles the altitude of the base of the sheet probably decreases.

North of Nyack the trend rather abruptly changes to the northeastward, and in the prominent Hook Mountain the escarpment regains the shore of the Hudson, exposing the underlying strata up to a considerable elevation above the river. Whether or not there have been irregularities in the contact line in the two miles of debris-covered interval is not known, but the trap has not changed its horizon in the formation to any considerable extent.

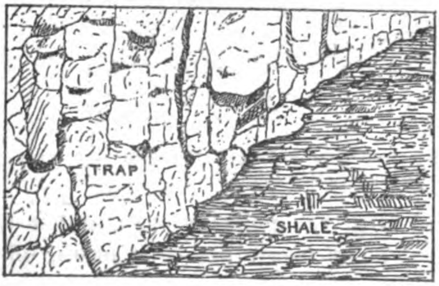


FIG. 24.—Lateral ascent of the base of the palisade trap across edges of strata, two miles north of Nyack, New York.

Northward along the river the contact is easily traceable, and retains a uniform altitude for about two miles, when it comes down about 30 feet to tide-water, and so continues for about 500 feet, to ascend again to approximately its original position. The transverse contact is exposed at the northern end of the irregularity, having the relations shown in the preceding figure.

At Rockland Lake some distance northward, another irregularity of similar character is indicated, and a small exposure of ragged uncomformity was exposed below the landing in 1884, but otherwise its vicinity is heavily covered with debris and talus.

About half way between Rockland Lake Landing and Haverstraw there is a small trap sheet in the arkose thirty or forty feet below the palisade sheet, and its relations are shown in the following figure:

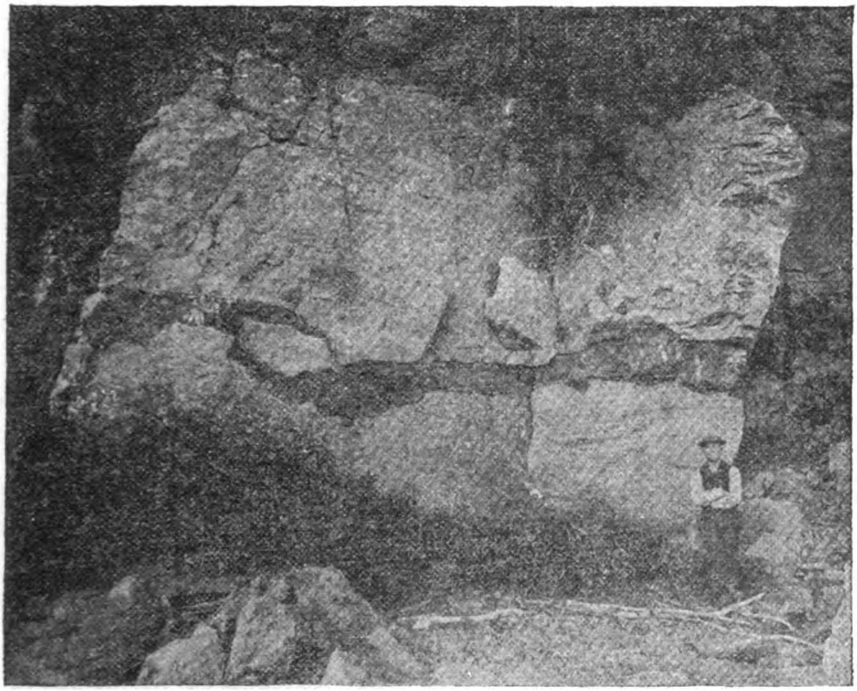


FIG. 25.—Trap sheet in arkose under palisade trap, on the shore of Hudson River, four miles south of Haverstraw, New York, looking west. From a photograph.

This anterior sheet varies in thickness from 3 inches to a foot, and may be traced for a short distance from the locality shown in the figure. The rock is a fine grained diabase, and has not altered the inclosing arkose to the least degree, but on the contrary the trap is slightly vesicular at some points along the contact.

The relations of the palisade trap to the underlying strata in the region of the great hook near Haverstraw are not well exposed, and there is considerable uncertainty in regard to the position of the contact and its changes of horizon. In discussing the structure of the region it is stated that the course of the sheet was not determined by the structure of the inclosing stata, as in the hooks of the Watchung Mountains, but by the crescentic course of the dike, aided to a considerable extent by the structure, but attended by unconformities by which a change of horizon is effected aggregating at least several hundred feet. Owing to the talus and debris, none of these unconformities are exposed, but at some points the base of the sheet is seen lying with perfect conformity on the sandstones which strike in some cases parallel to the trend of the ridge, and in others to the west-northwest. Between the West Shore Railroad tunnel and the foot of the High Torne the base of the sheet appers to ascend at least 150 feet, while just behind Haverstraw its base is 200 feet above the river, or approximately 300 feet above the position the contact would have held if it had followed the dip in this vicinity. As before suggested, it is possible that these irregularities are due in part or entirely to faults passing through the Short Clove and the Long Clove. These "Cloves" are deep depressions extending across the ridge, and they are approximately at the points where the changes of level take place.

West of Haverstraw the underlying strata are not exposed within half a mile of the trap until near Theils, where, as before noted, some pebbly conglomerates on the roadside dip gently southward directly under the edge of the sheet, and this conformable relation may prevail along the entire northern side of the hook. In the wide gap at Mount Ivy the surface of the sheet is at country level, probably being brought down by the marginal synclinal which crosses it in this vicinity. To the southward, underlying strata again come up, dipping gently to the southeastward with perfect conformity under the sheet, but not exposed in actual contact. Near Ladentown the calcareous conglomerate is exposed near the trap, but it presents no sign of alteration, and the pebbly conglomerates exposed within two feet of the trap farther southward are entirely unaltered.

Relations to overlying strata.—Owing to the extensive denudation to which the surface of the palisade trap has been subjected, overlying strata seldom extend far up its inner slope, and they are generally either removed down to the level of the detritus covered plain westward, or hidden by the heavy masses of drift which often extend for long distances along the western side of the ridge. There are, however, a sufficient number of scattered exposures along its course to indicate the structure of the trap and throw some light upon the mechanism of its intrusion.

In New York the only exposures of overlying strata are near the northwestern termination of the trap outcrop, where the relations shown in Fig. 17 prevail, and in a small outcrop of highly indurated, gently west-dipping shales, half way up the slope, in the road from Valley Cottage station to North Nyack. Elsewhere the trap either slopes gently down to the level of the back country, as in the vicinity of Rockland Lake and across the ridge from Nyack, or forms steep, rugged slopes having greater inclination than the dip of the strata in the adjoining outcrops, and indicating the extension above the surface of the dike portion of the mass. These steep, inner slopes are very conspicuous along the east-and-west ridge, southwest and west of Haverstraw, where the sandstones near the trap dip at very low angles to the westward, and southeast of Nyack, where similar conditions prevail to within a couple of miles of the State line, although in these instances the possibility of faulting is not entirely out of the question. In the cut just south of the West Shore Railroad tunnel, south of Haverstraw, there is a fine exposure of the back of the dike crossing the shales, as shown in the following figure (Fig. 26), and indicating the structure shown in Fig. 14, p. 37:

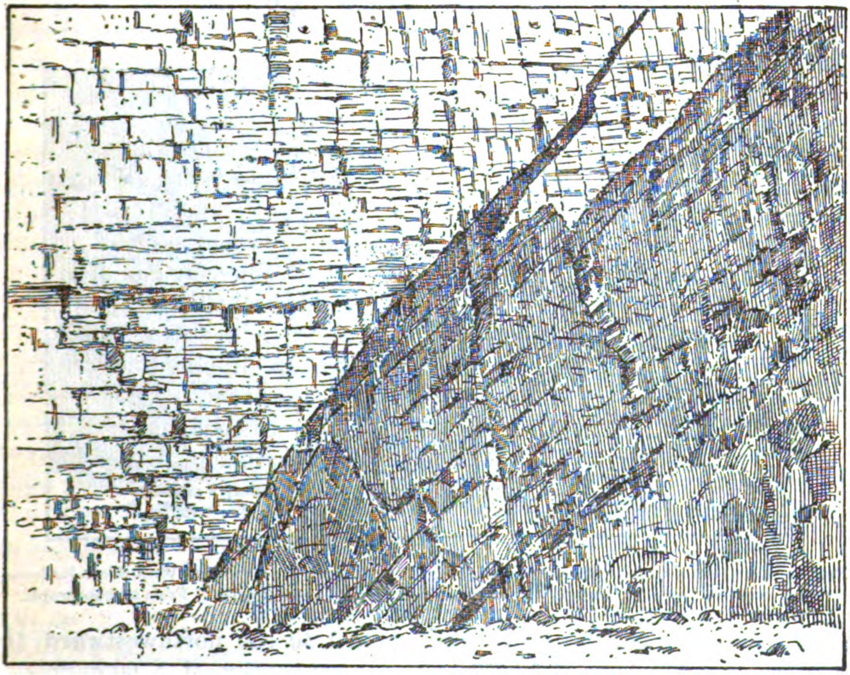


FIG. 26.—Exposure of back of dike of palisade trap in cut at southern entrance to West Shore Railroad tunnel, 3 miles south of Haverstraw, New York, looking west. From a photograph.

A short distance west of the tunnel a small area of intensely indurated shales is exposed in the roadside at the base of the ridge, and dips away from the trap nearly vertically, being apparently flexed to conform to the side of the dike.

For many miles southward from the State line into New Jersey the dike of the palisade trap does not appear to reach the present surface, and along the western slope of the ridge the sheet is overlain with essential conformity by highly indurated shales and sandstones. Two miles east of Closter is a series of exposures of indurated strata near the trap, in which only slight local unconformities are apparent, and on the road from Closter to Alpine a perfectly conformable contact is exposed.

Davis describes the locality in the stream bed near Floraville, south east of Englewood, where the indurated shales are exposed in conformable contact with the trap, and a mile south, near and on the road from Leonia to Fort Lee, there are numerous small, thin patches of intensely indurated shales lying on the surface of the sheet.

Along a stream, about a mile northeast of Granton, there is a fine exposure of the strata immediately overlying the trap, and although the exact point of contact is not exposed, considerable unconformity exists both in dip and strike, probably indicating the presence of the dike. Two miles farther south, the back of the dike is exposed in the cut of the West Shore Railroad, as shown in the following figure (Fig. 27), and having the relations shown in Fig. 13, p. 37.

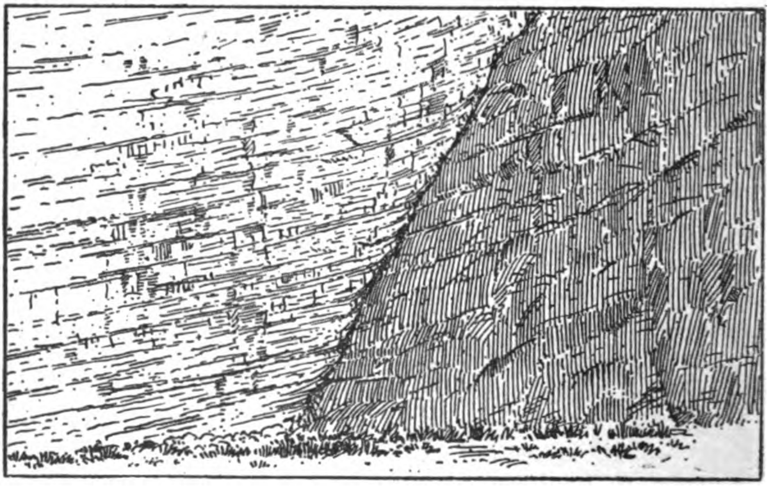


FIG. 27.—Exposure of back of dike of palisade trap in cut at western entrance to West Shore Railroad tunnel between New Durham and Weehawken, New Jersey, looking north. From a photograph.

In this exposure the strata are inclined to the northwestward 10 degrees, and the back of the dike slopes west-southwest > 60 degrees, so that the course of the dike is oblique to the strike of the strata. The rock in contact with the dike at this locality is arkose, greatly shattered at most points and considerably disintegrated, owing to the decomposition of its feldspathic constituent, but in places there is a welded, ragged contact showing unmistakably that the sharp break is not due to faulting. Between New Durham and Homestead Station (Schuetzen Park) the course of the dike is bowed eastward, as shown in Fig. 21 and on Pl. I, and its northwestwardly trend in the West Shore Railroad cut is part of this deflection, which may be connected with the change in horizon of the base of the sheet, on the other side of the ridge at Weehawken, as described on page 46.

In the small quarry, near the base of the hill, about 500 yards southeast of Homestead station, there is found the last exposure of overlying strata in New Jersey, in a mass of highly indurated, gently west-dipping shales, welded to the trap along a conformable contact line, indicating the extension of the sheet westward again to the base of the hill, and the descent of the dike below the surface. Opposite Jersey City the gentle trap slope extends down to the marsh or drift deposits, and on Bergen Point is the shore of Newark Bay. On the northwestern corner of Staten Island, and on a small island in the Kill opposite, there are exposures of unaltered, overlying, thin-bedded sandstones, dipping at a low angle westward, but they are at some distance from the trap, and nothing further is known of their relations.

As stated on page 42, there is a strip of overlying shales extending along the fault line up Bergen Point to the reservoir in Jersey City. In the exposures at Bayonne City Pennsylvania Railroad cut and the reservoir, they are entirely unaltered in texture or color, but are not exposed near their contact with the trap.

On the southwestern corner of Fairmount, in Jersey City, just east of Bergen Hill, there are some thin, irregular streaks of sedimentary material mixed with the trap, probably remnants of overlying strata, but the means by which they were included and their source are not known.

UNION HILL TRAP.

A short distance northeast of Suffern, New York, there is an isolated trap ridge very near the western border of the formation. It rises 150 feet above the surrounding country, and presents its steepest face to the eastward. It is in line with the northwesternmost outcrop of the palisade trap, as shown on Fig. 16, and is possibly due to an extension of that sheet brought up again by flexure or change in horizon. Its structural relations, so far as known, are shown in the following figure:

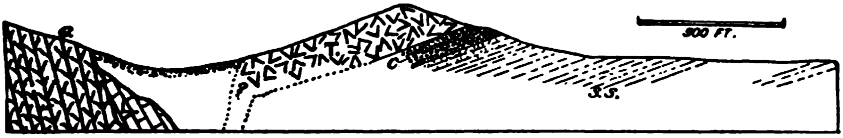


FIG. 28.—Section across Union Hill, northeast of Suffern, New York. Looking north. T, trap of Union Hill. C, conglomerate. SS, sandstones. G, gneiss. L, limestone (?).

No overlying strata are exposed, and the underlying rocks are heavy beds of quartz conglomerate, extending up to about 100 feet above the plain on the eastern side of the ridge, and dipping W. > 10°, under the trap sheet. The thickness of the latter is about 100 feet. It is a moderately fine grained diabase, presenting no evidence of vesicularity at any point, and rather more like the intruded traps than those extrusive in nature. The manner in which it terminates north and south and its exact horizon in the formation are unknown.

GRANTON TRAP.

Midway between Jersey City and Hackensack a small, intrusive trap mass constitutes a short ridge just across the turnpike from the western slope of the Palisade Mountain, and lying parallel with it. In Fig. 29 its areal and apparent structural relations are shown. Its striking resemblance in structure to the palisade trap is one of the most interesting features.

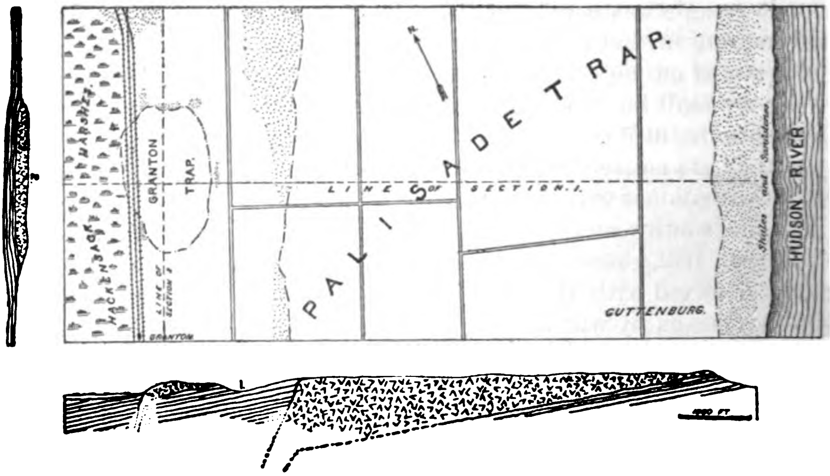


FIG. 29.—Map and sections showing relations of Granton trap to Palisade trap.

On the steep western side of the ridge the back of the dike is exposed in the West Shore Railroad cut, breaking almost vertically across the shales, of which only a small mass remains. On the eastern and northeastern sides the sandstones separating this trap from that of the Palisades dip northwestward conformably under the edge of the sheet. On the southern side of the ridge there are no outcrops. No overlying strata remain on the sheet and its outcrop terminates northward, southward, and eastward in escarpments, so that its former extent and the relations of its original north and south edges to the dike and the inclosing strata are not determinable. As its inner side is not exposed at either end of the ridge, the thickness of the dike is not known, and as there are no traces of its extension to the north or south it probably terminates within the present trap-covered area.

The rock of the posterior ridge is a moderately fine grained basalt, very similar to much of that of the adjacent palisade mass. It is dense and homogeneous throughout and presents no traces of vesicularity. The adjacent shales are greatly altered, and the trap is fine grained at the contact and welded to the sedimentary material. The thickness of the sheet now remaining is probably near 125 feet, but as the entire surface has been eroded more or less deeply, the original thickness may have been considerably greater.

SNAKE HILLS TRAP.

Big and Little Snake Hill are two knobs rising abruptly from the tide marsh some distance west of the inner slope of the palisade trap in Bergen Hill, near the latitude of Hoboken. The smaller hill is a trap outcrop covering a few acres to a maximum height of 76 feet, and nothing is known of its structural relations. The larger hill is half a mile farther west, along the eastern shore of the Hackensack River, and covers approximately a square half mile. Its elevation varies between 125 and 200 feet, and its central mass of trap is flanked in part by small remnants of sandstones and shales. It has steep slopes on all sides but the northern, which is drift-covered and gradual, and its structural relations are quite similar to those of the Granton ridge.

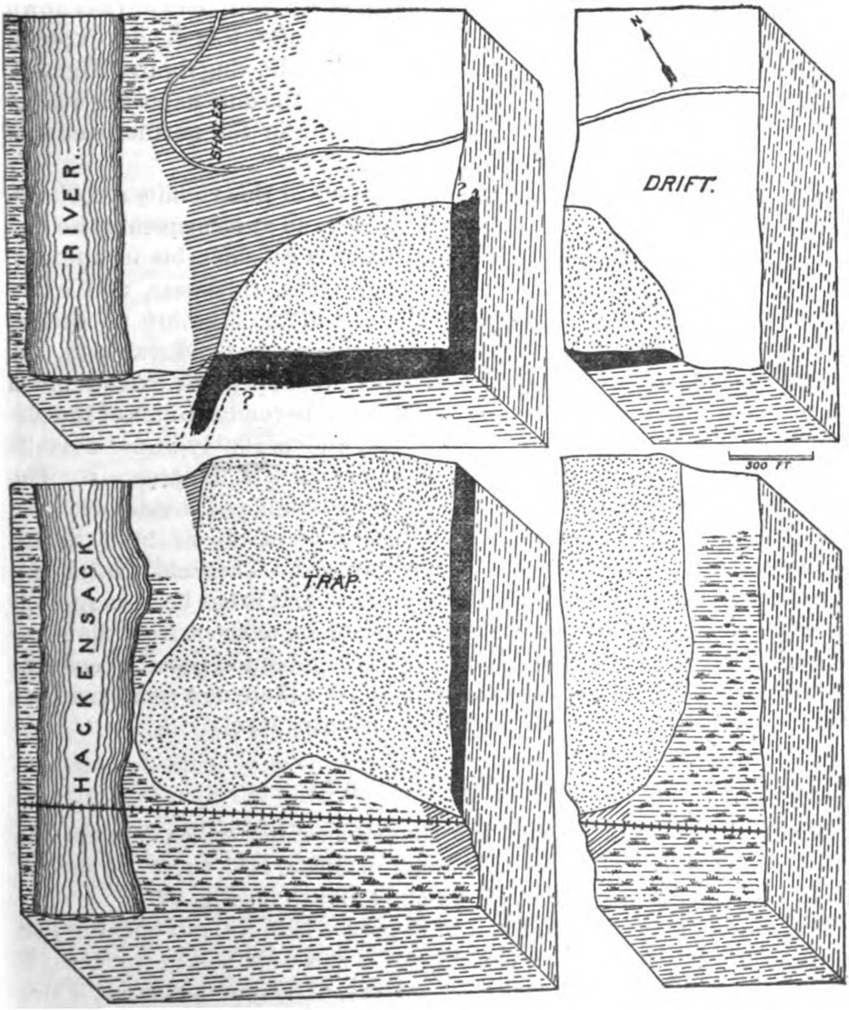


FIG. 30.—Stereogrammic map and sections of Snake Hill, New Jersey.

The trap forming the precipitous eastern side of the hill is a sheet with an irregular bedded structure, underlain southward by sandstones and shales which dip N. 30° W. > 14°, in the railroad cut. On the northern side of the cut the contact with the trap is exposed, and the line of junction, though somewhat ragged, is essentially conformable to the bedding. The dip soon carries the underlying strata beneath the surface westward, and the southwestern corner of the hill is entirely trap. On the western slope the sandstone and shale outcrops begin again as shown on the map, Fig. 30, and extend northward to the drift mantle, which obscures all but the trap boundary to the north and northeast. In the quarry near the southern termination of these sandstone outcrops the edges of the strata are exposed abutting against the back of the dike which rises along the western slope of the hill to join the sheet, which thence appears to extend eastward as shown in the cross-section. Formerly this unconformity was finely exposed at the center of the quarry, as shown in the following figure (Fig. 31), but in 1886 the only exposure was an obscure one in the northern end of the quarries.

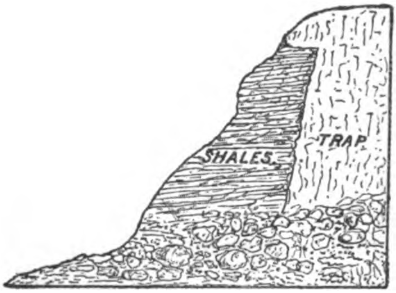


FIG. 31.—Partial cross-section at one time exposed in western side of Snake Hill, showing the back of the dike. Looking north.

The dips in this vicinity are N. 20° W. > 15°, and at some points the disturbance is considerable in amount.

The extent, thickness, and exact relations of the dike are uncertain, for its inner side is not exposed, but it does not appear to extend north and south beyond the area of the elevation, and probably is not over 20 or 30 feet thick at the greatest. The sheet is undoubtedly intrusive, as shown by its ragged contact with the shales in the railroad cut and by the alteration of the strata in the immediate vicinity of the sheet wherever exposed. The Snake Hills trap is exactly similar to the typical Palisade rock, and it has been suggested by Credner and by Russell that it is a posterior offshoot from the same mass. As the entire surface of the sheet has been exposed to erosion, the original thickness is not determinable, but there now remains about 200 feet, which is in greater part above country level.

ARLINGTON TRAPS.

Along the eastern slope of the sandstone ridge which bounds the Hackensack meadows, three miles west of Snake Hill, there are several small trap sheets, the extent of which is shown on Fig. 32.

Beginning at the south, the first exposure is in a small opening just north of the railroad, where the edge of a sheet six feet in thickness is seen conformably intercalated between beds of coarse sandstone, which are not perceptibly altered in its vicinity. A few rods farther north, at A on the map (Fig. 32), the edge of this sheet was exposed again in excavations for copper in Westlake's quarry, and its relations are shown in the following figure:

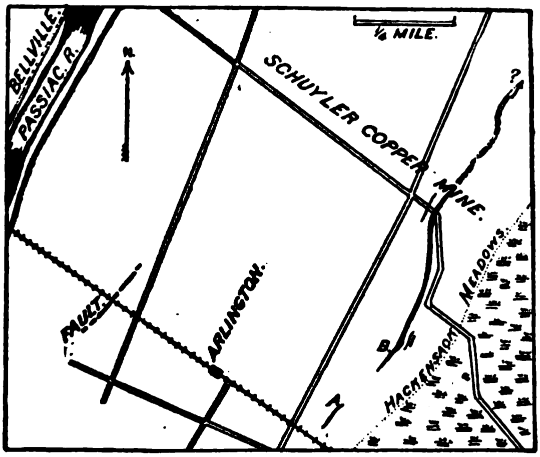


FIG. 32.—Map of the region near Arlington and the Schuyler copper mine, north of Newark, New Jersey.

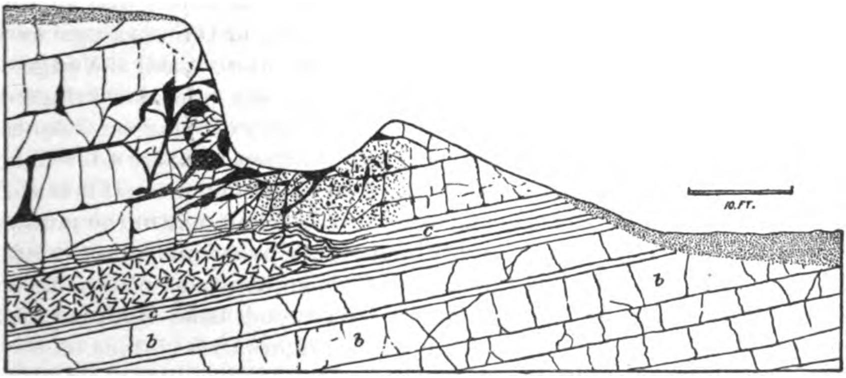


FIG. 33.—Cross-section at A on Fig. 32, in Westlake's quarry, looking north. The black blotchings and dottings represent seams and impregnations of copper ores. *a*, trap sheet; *b*, sandstone; *c*, shales.

The writer was present during the uncovering of the trap, and sketched all the details shown in the figure. The sheet has forced its way forward near the junction of shales and sandstones, lifting the latter, and probably causing the fissures which held the plates and bunches of chalcocite. The trap is a fine grained, dense, bluish gray rock, five feet thick, and with smooth surfaces to which the strata were generally found welded. The adjoining shales are intensely altered, but the alteration only extends for a few feet from the trap.

Beginning in the cemetery and thence extending northward for about a mile, a trap sheet is exposed at intervals to the old Schuyler copper mine, and may be an extension of the sheet just described. At B on the map it is associated with two smaller trap masses apparently having the relations shown in the following figure, the dike ascending along a line of fault and sending off a small sheet eastward :

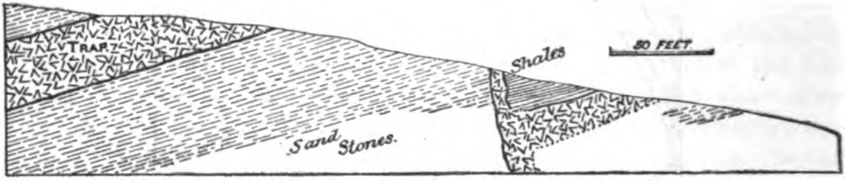


FIG. 34.—Cross-section of trap outcrop in cemetery at Arlington, New Jersey. At B on Fig. 32, looking north.

The main sheet in this vicinity is exposed in contact with sandstone, in which it is conformably intercalated, and there is comparatively little disturbance in the bedding or alteration in color or texture. North of the cemetery the edge of the sheet forms a mural escarpment along the turnpike, and its thickness is increased to 20 feet. A short distance westward in this vicinity there is a small sheet in the overlying strata, which crosses the road as shown in the map. After crossing the turnpike the main sheet pitches beneath the surface and forms the floor of the old Schuyler mine, which sends a net-work of galleries through the cupriferous sandstones near the contact. It was hoped that in this mine the structure of the trap could be studied, but the workings were found to be fallen shut in the parts of greatest interest, and the edge of the sheet could not be reached. Generally in the mine the surface of the sheet is smooth and comformable to the gently dipping sandstones, but there are irregularities in which the strata are crossed for a few feet, and the sheet sends several offshoots up into the sandstone. It is stated that the trap surface was followed westward for a half mile in the mining operations, and that at one point it is traversed by a fault of considerable amount. It is possible that this fault is an extension of the one so finely exposed in the New York and Greenwood Lake Railroad cut, near Arlington, and shown in the following figure :

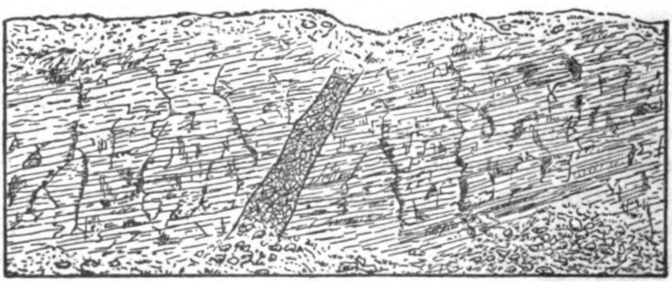


FIG. 35.—Fault exposed in cut for New York and Greenwood Lake Railroad, west of Arlington, New Jersey, looking north. From a photograph.

Cook and Russell have described some features of this fault, and its amount has been estimated at about five feet, but after a very careful reexamination of the monotonous succession of sandstones and shales on either side, the writer is convinced that it may be much greater. The disturbance is considerable, and a width of from 6 to 8 feet is occupied by fault-rock composed of slickensided fragments, coated with chloritic matter, calcite and quartz. The hade is 20 degrees to the westward and the down-thrown side appears to be the eastern. The trend is north-northeast and south-southwest, as shown on the map, and although the fault is not traceable on the surface, it very likely extends to the Schuyler mine. Russell considered the fault-rock of this dislocation the result of metamorphism, which is also stated to extend for some distance on either side, indicative of the presence of trap below, but, excepting the coating mentioned above, the rock is not altered in appearance, and its hardness is not perceptibly increased.

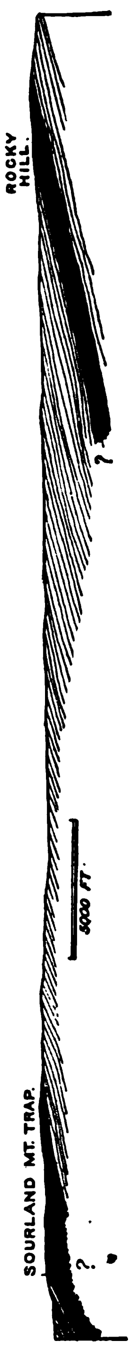


FIG. 36.—Section through Rocky Hill at gap of Millington River across to Sourland Mountain, looking northeast.

LAWRENCE BROOK, TEN MILE RUN MOUNTAIN, ROCKY HILL, PENNINGTON MOUNTAIN, BALD PATE, AND JERICHO HILL TRAPS.

A series of trap outcrops extends from the Cretaceous border six miles southwest of New Brunswick, west-southwestwardly, diagonally across the southern corner of the New Jersey Newark area into Pennsylvania, a distance of 25 miles. They are in the region to which I have given the least attention, and their structural and stratigraphical relations are not well exposed for study. Pls. I and VI and Fig. 37 indicate the position and extent of the several members of the series, and their relation to the palisade trap was discussed on a preceding page.

With the exception of the Lawrence Brook outcrops, which are at country level, the traps of the series give rise to sharply defined ridges, rising three or four hundred feet above the red shale country, and consisting of a thick trap sheet, more or less heavily flanked by the highly altered, gently west-dipping strata into which it was intruded.

In the gap by which the Millington River crosses Rocky Hill at Rocky Hill Station there is a typical cross-section exposure in which the relations are as shown on the right in Fig. 36.

Whether or not the breaks in the line of outcrop that isolate Pennington Mountain are due to discontinuity in the trap is not definitely known, but the sheet is probably continuous, and its presence under the surface indicates the belt of altered shales in the intervening gaps.

The trap is uniform in character throughout, being in greater part a coarse grained, blue gray rock, similar to that which predominates in the palisade outcrop, and similarly fine grained and bedded in structure near its contact with the sedimentary rocks. The latter are always more or less highly altered, frequently for a hundred feet vertically above the sheet, and this alteration is especially noticeable and interesting at the copper mine near Griggstown, Rocky Hill gap, and Lawrence Brook, as described by Rogers and Cook. There are a number of irregularities in the course of the Lawrence Brook, Ten Mile Run Mountain, and Rocky Hill trap which are not entirely due to changes in structure of the inclosing strata and a progressive ascent westward, in its horizon in the formation; for at Lawrence Brook the sheet lies near the basal beds at the Cretaceous border, and at Hopewell, 1,000 feet higher if faults do not intervene. In the following figure (Fig. 37) these features are shown, and it will be seen that the trap crosses the strike for some distance south of Hopewell, and at the northwestern end of Ten Mile Run Mountain.

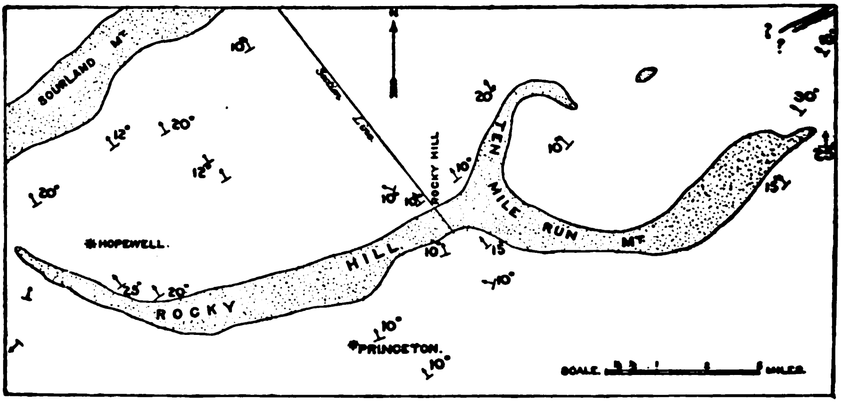


FIG. 37.—Map of Rocky Hill, Ten Mile Run Mountain, Lawrence Brook trap and vicinity.

Unfortunately I did not have an opportunity to study the question in detail, and do not know whether the unconformities are exposed in the shales which underlie the trap along the southern slope of the ridge, or in those on its other side. The structure of the crescentic outcrop east of Rocky Hill is not definitely known, and while its form is very suggestive of a cross synclinal or of centroclinal flexure, it is apparently due to a bifurcation of the sheet or of the course of its feeder, and progressive changes of horizon in the trap at the southern part of the Ten Mile Run Mountain.

In the interval between the western end of Rocky Hill and Pennington Mountain the strata are considerably disturbed in position and altered in color and texture. At its westernmost exposure the Rocky Hill trap thins out and pitches beneath the surface, apparently to pass over the point of a low northwest pitching anticlinal and reappear in Pennington Mountain, as suggested by the dotted lines in Pl. VI.

Pennington Mountain consists of a trap sheet, conformably capping northwest dipping, altered shales, which extend up its steep eastern side and flank its western slope. The trap thins southwestwardly and retreats down the dip to sink below the surface, but probably reappears again in Bald Pate. This irregular ridge is similar in structure to Pennington Mountain, but is apparently traversed by a fault or flexure causing its wide, northern lobe. The trap of Bald Pate reappears on the Pennsylvania side of the Delaware as Jericho Hill, the hooked termination of which is due to flexure, as described by Lewis, and indicated in Pl. VI.

SOURLAND MOUNTAIN TRAP.

This great intruded sheet and its heavy flanking of indurated shales constitute the prominent flat topped mountain extending from Neshanic to the Delaware River, and thence into Pennsylvania to the great medial fault which cuts it off very near its natural termination. Throughout its course the ridge rises steeply to about 200 feet above the adjacent plain, with a width averaging near four miles, and with both slopes approximately the same in inclination. The trap outcrop occupies the center of the elevation, varying in width as shown in the map, and the belt of hardened and darkened sedimentary rocks forms the edge of the plateau and the corrugated slopes.

Along the Delaware, south of Lambertville, the trap sheet is finely exposed in cross section, and the following figure shows its relations to the associated strata and to the other trap sheets of the Delaware River region.

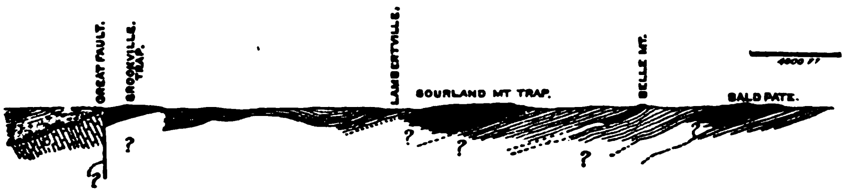


FIG. 38.—Section along the northeast side of the Delaware River from Titusville to Stockton, New Jersey, on line L —— K, Plate VI. O, lower Paleozoic limestone overlain by basal Newark conglomerateand sandstones.

In the main, the trap-sheet preserves essentially the same horizon throughout, but east of Ringoes there is a sharp deflection in the line of outcrop, which is due to a temporary change of horizon, amounting to about 250 feet vertically, and slightly aided by flexure.

The strata inclosing the sheet dip to the northwest in the main, at angles between 12 and 18 degrees, the principal variation being near the northern end of the ridge, where the dip is only about 5 degrees and the width of outcrop correspondingly increased, and along the Delaware, where the amount is about 22 degrees. A singular feature in the structure of the Sourland Mountain trap sheet is the comparatively greater inclination of the strata on its western flanks than that of the underlying beds and those in the plain country to the westward. This structure is not apparent throughout the course of the ridge, but is the most noticeable between the deflection near Ringoes and its northern termination. East of Ringoes the dips are at first 10 to 12 degrees, but as the slope of the ridge is ascended they progressively increase finally to 25 degrees, while on the eastern side the amount is about 12 degrees throughout. It seems probable that this increase in dip indicates the structure shown by the dotted line A in the following figure, but it is also possible that it is due to a general longitudinal flexure, as shown by B.

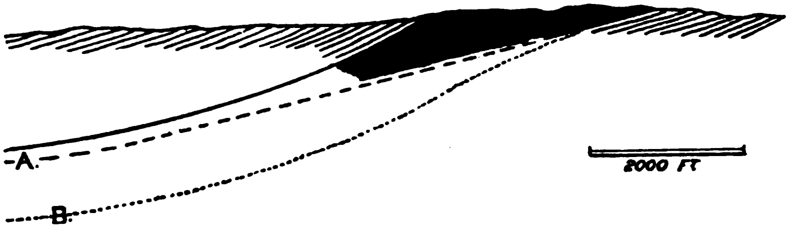


FIG. 39.—Section across Sourland Mountain from Ringoes to Snydertown, New Jersey, on line C——X, Pl. VI.

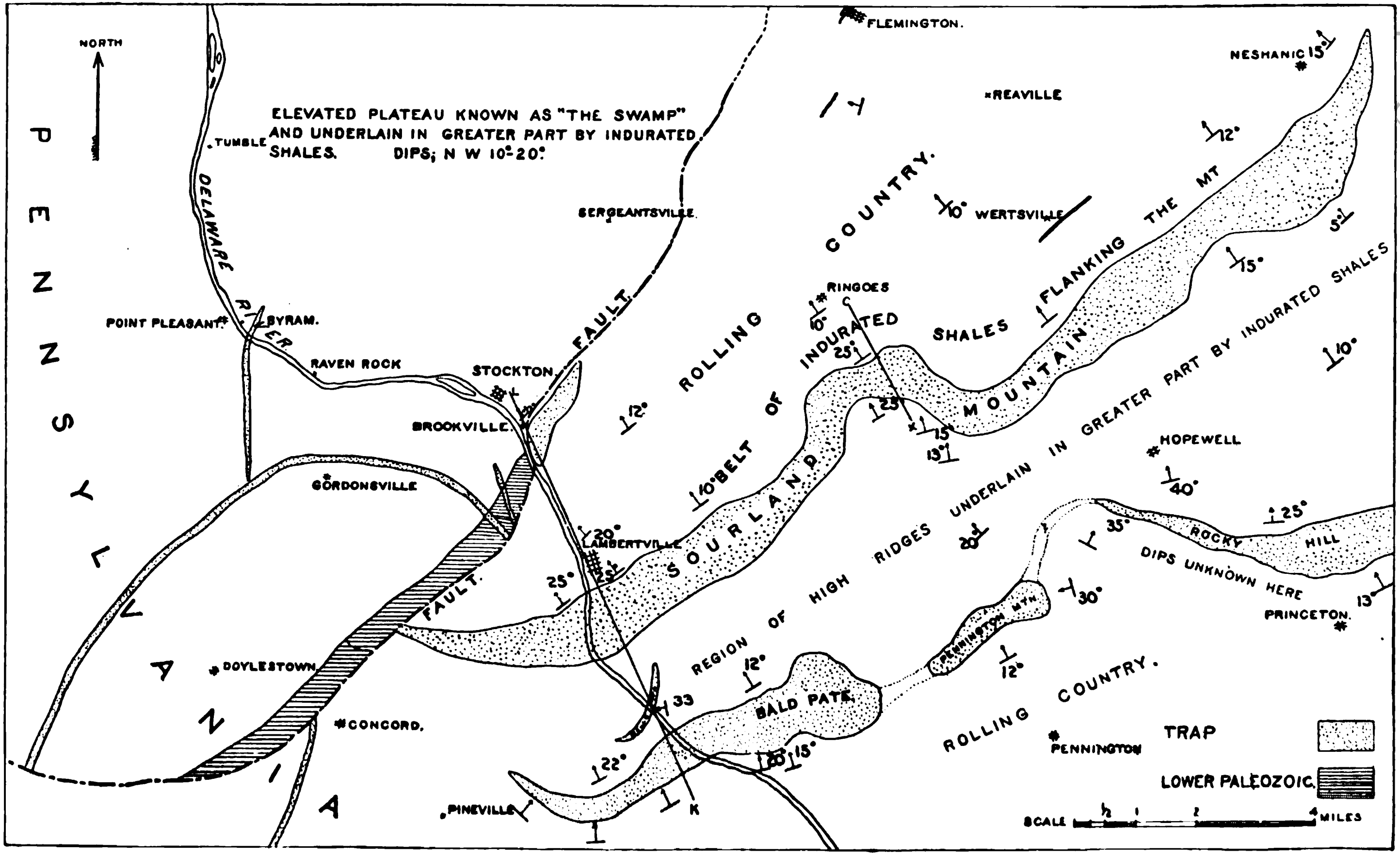
The thickness of the Sourland Mountain trap appears to be generally near 700 or 800 feet, but along the Delaware the amount is nearly 1,500 feet if the sheet is not traversed by faults. Its northern termination near Neshanic is due to thinning out, and the mechanism of its increase in thickness southward is not known, as it may be due either to wider separation of the inclosing beds by flexure or to progressive lateral unconformities to their edges. The terminal outcrops in Pennsylvania were not studied.

The rock of the sheet is rather coarse grained, except near its contacts, where it is often very fine grained, and is in general very similar to the palisade trap and the rock in the ridges to the east and south. It appears to be the result of a single intrusion and to occupy a horizon considerably above that of the palisade trap.

Contacts of the trap with the inclosing strata were not found and would be very dificult to recognize in hand specimens on account of the intense induration. This alteration of hardness and color of the shales is one of the most characteristic features of the ridge, and it is due to their hardness that the altered beds constitute so considerable a portion of its flanks. The alteration seldom extends for less than 200 feet above the trap, and 30 or 40 feet below, but generally prevails in both directions for five or six hundred feet vertically. At Lambertville, and on the opposite side of the river as described by Rogers, and near Rocktown, southeast of Ringoes, nodular alteration products are conspicuous in considerable variety.

TRAP OF CUSHETUNK AND ROUND MOUNTAINS.

Ten miles west of the hooks of the Watchung Mountains is the prominent ridge of Cushetunk Mountain, which extends in an irregular


NORTH
PENNSYLVANIA
ELEVATED PLATEAU KNOWN AS "THE SWAMP" AND UNDERLAIN IN GREATER PART BY INDURATED SHALES. DIPS; N W 10°-20°
TUMBLE
DELAWARE RIVER
POINT PLEASANT
BYRAM.
RAVEN ROCK
STOCKTON
BROOKVILLE
SERGEANTSVILLE
FLEMINGTON.
REAVILLE
NESHANIC
WERTSVILLE
RINGOES
GORDONSVILLE
DOYLESTOWN
CONCORD.
PINEVILLE
LAMBERTVILLE
FAULT
FAULT.
ROLLING COUNTRY.
BELT OF INDURATED SHALES FLANKING THE MT
SOURLAND MOUNTAIN.
REGION OF HIGH RIDGES UNDERLAIN IN GREATER PART BY INDURATED SHALES
BALD PATE
PENNINGTON MTN
ROCKY HILL
DIPS UNKNOWN HERE
HOPEWELL
PRINCETON.
PENNINGTON
ROLLING COUNTRY.
K
C
15°
12°
10°
5°
15°
10°
10°
25°
12°
10°
23
15
13°
40°
25°
35°
20°
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13°
20°
25°
25°
20°
33
12°
12°
22°
20
15°
TRAP
LOWER PALEOZOIC.
SCALE ½ 1 2 4 MILES

horse-shoe shaped course to the border of the formation, as shown in Fig. 40.

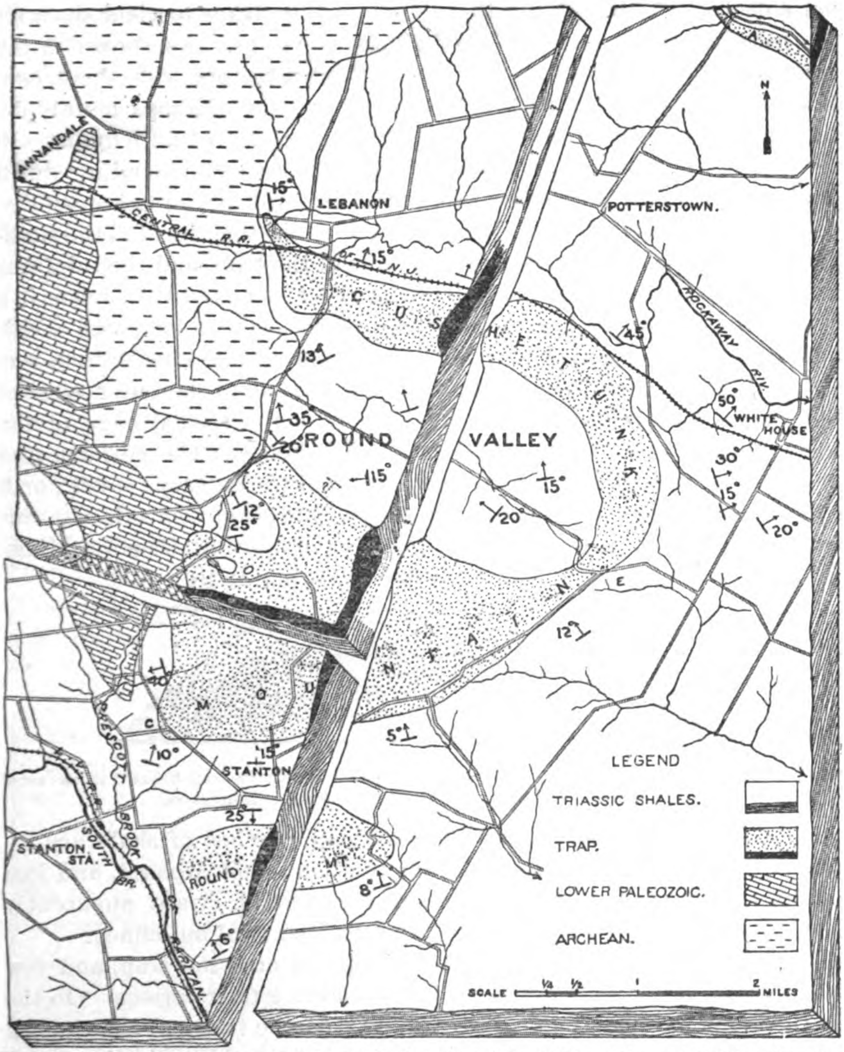

FIG. 40.—Stereogrammic map and sections of Cushetunk and Round Mountains and vicinity, New Jersey. A, part of New Germantown trap.

Excepting at its western ends the portion of Cushetunk Mountain bordering the inclosed, oblong, red shale valley is of unbroken crest line, generally elevated between 650 and 850 feet above tide and having a steep inner slope. In its broad lobe southward the slopes are gentle to the west and south but steep to the southeast, and a depression extends up into the mountain from the westward.

Round Mountain rises pyramidally to an elevation of 608 feet above tide, with moderately steep slopes on all sides, and is separated from Cushetunk by a depression extending down to 345 feet above tide.

The structural relations of the region are complicated by flexures and irregularities of intrusion, and outcrops of the sedimentary rocks are not sufficiently numerous in the vicinity of the traps to yield data for the satisfactory determination of all the relations. As shown in the cross-sections, the trap appears to have constituted one wide sheet, considerably flexed, and with the form of its present outcrops mainly determined by the removal of the trap from the crests of anticlinals. In the northern ridge of Cushetunk the trap is a sheet extending down between the strata northward and northeastward for an unknown disdistance in the slightly flexed monocline. In the vicinity of E the sandstones are not exposed within a half mile of the trap, and the relations are uncertain, but the inner edge of the sheet comes to the surface in a synclinal which begins near that point, and thence with increased width and depth extends westward, as shown in the medial longitudinal section in Fig. 40. Southwest and west from E, around the outer edge of the mountain, the strata dip gently beneath the eroded edge of the sheet until near C, where the trap pitches beneath the surface, and so continues along the wide western border of the outcrop. Just north of the center of the cross-section the edge of the sheet comes to the surface again and is exposed, overlapping the bordering Paleozoic limestone for some distance, as shown in the following figure:

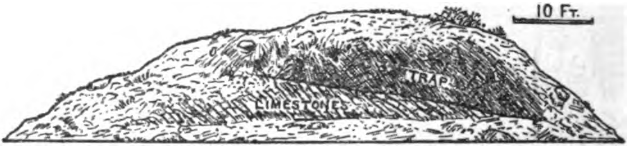

FIG. 41.—Contact of Cushetunk trap and Cambrian (?) limestone near Prescott Brook, 2 miles east of Allentown, New Jersey. Looking north. From a photograph.

Up the depression just east of this overlap, patches of shale are inclosed by the trap outcrops, but their relation is not exposed, and just northward there is a considerable embayment of strata apparently below the sheet in horizon brought up by a low, local anticline.

In Round Valley the strata are not exposed near the trap, and few dips were observed that would aid in determining the relations. On the north side of the valley the dips are towards the trap; at the eastern end no outcrops are found within half a mile of the ridge; in the center northwestern dips prevail, but they become more to the westward south of the valley road, and at one point near the trap the dip is apparently steeply to the southwestward in an obscure outcrop, as shown by the dotted dip-mark in Fig. 40. Notwithstanding the scarcity of positive evidence it seems probable that Round Valley is an irregular anticline, with its axial plane dipping northeastward and pitching northwestward.

The trap of Round Mountain lies in a well defined synclinal or spoon, and is separated from Cushetunk by a local anticlinal shown in the cross-section.

The Cushetunk trap appears to be an intrusive sheet, as it is undoubtedly unconformable to the inclosing strata at some points, and has caused extensive alteration in their hardness and color. In the railroad cuts between Lebanon and White House the conformable overlying strata are indurated at several points for some distance from the trap, and near Stanton the underlying beds are hard and black for a thickness of at least 150 feet. Contacts with the sediments were not found, but north of Stanton the line of juncture was only obscured by a narrow belt of debris, and might have been discovered by a more careful search than I had time to make.

The thickness of the Cushetunk trap could be determined even approximately only in the northern part of the ridge, where it averages near 400 feet. In the southern outcrops the original thickness of the sheet was reduced by erosion, as its entire surface is exposed, but north of Stanton the amount is at least 900 feet, if the dip is constant and no faults intervene. The surface of the sheet in Round Mountain is similarly exposed to denudation, but a thickness of at least 350 feet of trap remains. Near E, and from C northward, the uneroded edge of the sheet is very thin, and the northern ridge appears to end westward by thinning out near Lebanon.

The Cushetunk trap is a dense, coarse grained, gray rock, excepting at its edge near C, where it is fine grained and more like an extrusive rock in appearance and topography.

SMALL SHEETS IN THE RARITAN RIVER REGION.

Martin's Dock.—The occurrence of two thin sheets or trap intercalated in the shales near this point is described and figured by Cook,[1] and by Davis, in his Triassic Trap Memoir, page 276 and figure 52, and in Cook's report for 1882 a photo-lithograph is given of a portion of the exposure. I can add but little to this information. The exposure is on the north bank of the Raritan, two miles below New Brunswick, and the following figure represents the general relations.

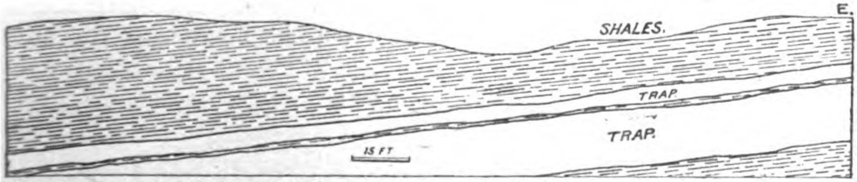

FIG. 42.—Cross-section exposure of trap sheets along the Raritan River near Martin's Dock, New Jersey, looking north.

The upper bed varies in thickness from 18 inches to 2 feet, the lower bed from 13 to 15 feet, and the separating strata is generally about a foot thick. The trap is a uniformly fine grained, blue gray rock, slightly denser and finer grained at the contact. Its surface and contacts are slightly irregular locally, but essential conformity prevails. The alteration in color and hardness in the inclosing shales is confined to within a few inches of the contact on either side, and no evidence of fusion was found. The intrusion has caused no noticeable disturbance in the strata except a slight breaking or offsetting of the beds at the contact line, and the two sheets are entirely separated as far as exposed. No evidence could be found bearing on the sequence of their intrusion, and it is possible that the separating shaly bed is a local inclusion in a single trap mass.

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[1] Geology of New Jersey, 1868, p. 202.

New Brunswick.—Cook[1] refers to the occurrence of trap southwest of New Brunswick, in the cut of the Pennsylvania Railroad, and at the old Raritan copper mine. The first exposures from the north are in the railroad cut, a short distance north of the "straight turnpike," where there appears to be a sheet approximately five feet in thickness intruded in the shales. The outcrop is an obscure one, and the trap is a mass of fragments inclined parallel to the dip of the strata. South of this sheet in the cut there is another and smaller trap mass, equally obscure in its relations and similarly composed of a fine grained, gray rock. Trap fragments, apparently representing the extension of both of these dikes, were found at intervals in the fields for a couple of miles to the southwestward, and at the old openings of the Raritan copper mine there is an outcrop just west of the shaft, apparently the northernmost trap, and, judging from the fragments, the other sheet was pierced by the shaft. No attempt was made to trace the traps farther southward, and they may possibly be connected with the Ten Mile Run trap, with the western arm and outlier of which they are in line. Continued northeastwardly they would cross the Raritan about at Martin's Dock, and appear to be at the same horizon as the two sheets at that place.

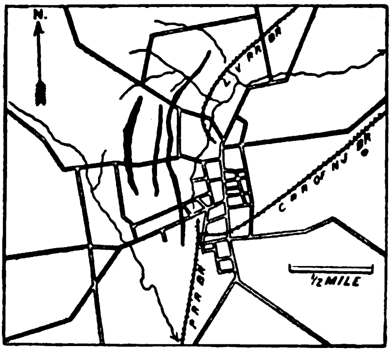

FIG. 43.—Map of Flemington, New Jersey, and vicinity, showing the extent and position of the three trap masses.

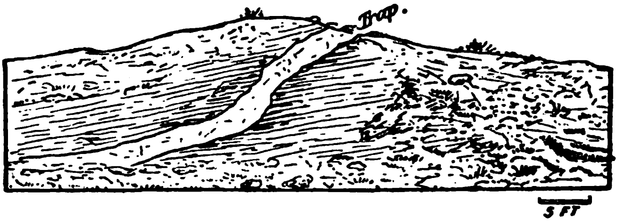

FIG. 44.—Trap sheet just east of Wertsville, crossing road to Stoutsburgh, looking north.

Flemington.—In the vicinity of Flemington there are several lines of trap intrusion, which are referred to in part by Rogers and by Cook.

Geology of New Jersey, p. 204, and in the report for 1882, p. 59.

The principal mass constitutes a ridge just west of the town and extends north and south for less than half a mile, not reaching either the Clinton or the Stockton turnpike. The exact relation of the trap to the sandstone is not exposed, but from the structure and induration of the adjacent strata it is thought the trap constitutes a sheet thirty or forty feet in thickness, intruded up the northwest dipping beds of shales. Parallel to this trap and between it and the town are two smaller lines of outcrop, having the positions shown in Fig. 43. The easternmost trap forms a prominent outcrop on the Stockton road near the Pennsylvania Railroad depot, and was also found in the old copper mine near by. An extension of apparently the same trap is fairly well exposed in a run just north of the Clinton turnpike, where it appears to be a thin sheet intercalated in slightly altered shales.

Three miles south of Flemington, near Copper Hill, fragments of trap in the fields possibly indicate the southward extension of the Flemington intrusions.

Wertsville.—Six miles southeast of Flemington, and a few rods east of the road from Neshanic to Ringoes, there is a trap sheet, which was traced for about a mile parallel to the Sourland Mountain sheet, and distant from it a mile and a quarter. The best exposure observed is on the road east of Wertsville, where the relations are as shown in the accompanying Fig. 44.

The thickness of the sheet is about two and a half feet, and while the trap is in the main conformable to the west-dipping shales, it crosses them for several feet in the exposure. The rock is fine grained basalt, considerably decomposed.

Neshanic.—In the cut of the Lehigh Valley Railroad, about half a mile west of Neshanic station, there is a cross-section exposure of a small intruded trap sheet. Its thickness varies from two to three feet, and it is essentially conformable to the gently northwest-dipping strata, although on the northern side of the cut it crosses their edges at a low angle. The shales are somewhat darkened in color and hardened immediately adjacent to the trap, but the alteration is not extensive. The intrusive rock is a fine grained, bedded basalt, uniform in texture throughout. It could

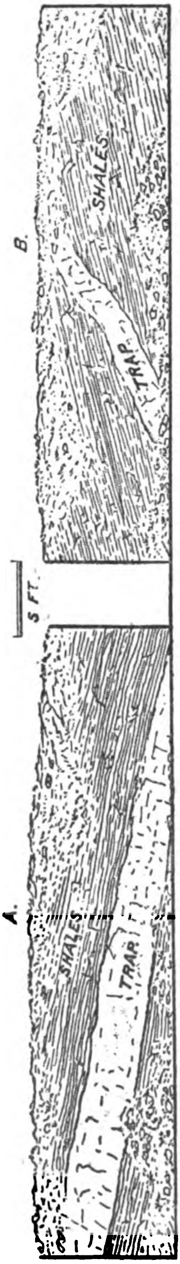

Fig. 45.—Cross-section exposures of trap sheet in railroad cut half a mile west of Neshanic Station, New Jersey. A. On south side of cut. B. On north side of cut. From a photograph.

be traced on the surface for only a few yards in either direction from the cut. Its position is shown in Pls. I and VI, and its relations in the accompanying Fig. 45.

SMALLER TRAP MASSES OF THE DELAWARE RIVER REGION.

Point Pleasant.—This trap outcrop was alluded to by Rogers in his final report on New Jersey, page 150; Cook in Geology of New Jersey, page 192, and in his report for 1882, page 63; H. C. Lewis in Am. Phil. Soc. Proc., vol. 22, page 454, and by Davis, in Triassic Traps, etc., page 277. Cook suggests, 1882, that there are two interbedded trap masses, and Davis describes the locality in considerable detail, announcing the presence of seven trap sheets, two south of Byram station, one at the quarry just north, and four in a ravine some distance northward. My examinations have convinced me that there is but one trap sheet, and the other supposed ones are heavy beds of highly altered shales. Several specimens of each were obtained and a microscopic examination showed very plainly the clastic nature of all but the coarsely crystalline rock of the conspicuous outcrop south of Byram station. This trap is an essentially conformable sheet between 100 and 125 feet in thickness, intruded between beds of shales which are altered for a short distance below, and for nearly half a mile (500 feet vertically) above the sheet. The exact contact of trap and shales was not observed, but in a ravine extending east from near Byram there is an exposure near the line of upper contact and possibly the junction could be found on careful search. The dips throughout are gently to the northwest, and there is no evidence of disturbance caused by the intrusion. The trap outcrop extends east of Byram about a mile, and southward in Pennsylvania, according to Lewis, about five miles. The rock is very similar to the typical palisade trap and is fine grained near the contacts and coarser in the center. Its general relations are shown in the following section, and its extent and relation to other traps in Pl. VI.

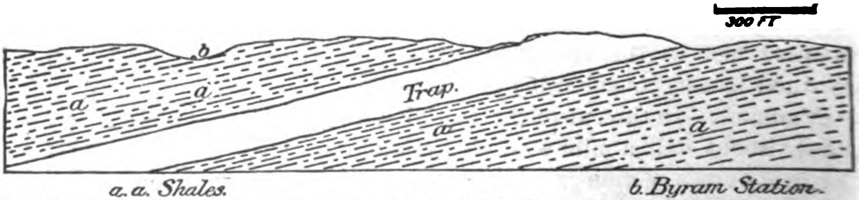

FIG. 46.—Cross-section showing the relations of the Point Pleasant trap at Byram, New Jersey, looking northeast.

Belle Mountain.—Belle Mountain, an abrupt, narrow ridge on the east side of the Delaware, between Sourland Mountain and Bald Pate, is the edge of a small intruded trap sheet. Its length in New Jersey is about half a mile, and it extends across the river into Pennsylvania for about two miles, appearing to end in either direction by thinning out. Its course is somewhat oblique to the strike of the inclosing strata, but it does not appear to have caused any considerable amount of disturbance or alteration. The rock is coarse grained, and similar to that of Bald Pate, and its relations to the other trap masses in this vicinity are shown in Pl. VI, p. 60, and Fig. 38, p. 61.

Brookville.—Midway between Lambertville and Stockton there is a trap outcrop rising abruptly from the Delaware and extending six or seven hundred yards along the river, and thence northeastwardly for a mile and a half. It is an irregular sheet of coarse grained diabase, and has caused considerable disturbance and alteration in the associated strata. It lies very near the great fault which brings up Cambrian and Ordovician rocks in the center of the formation in Pennsylvania, and it was Lewis's opinion that the trap had been intruded in the fault rock of this great dislocation. Exposures are few and unsatisfactory in its vicinity, and the relations are not entirely determinable, but it seems probable to the writer that the fault passes just northwest of the trap which appears to be entirely inclosed in Newark shale. The trap does not cross the river into Pennsylvania, at least on the surface, and may be cut off by the fault which crosses its course at the Delaware.

SMALL DIKES.

Besides the offshoots descending from the base of the palisade trap, several dikes were incidentally discovered in the progress of the work, and Cook[1] calls attention to the Blackwell's mills' dike.

Blackwell's mills.—On the east bank of the Millstone River, near this place, two miles above Millstone, there is a fine, cross-section exposure of a dike which was found to extend four miles westward, and Cook has traced it in the opposite direction nearly to the Raritan, along the course shown on Pl. I. The dike does not appear to mark a line of dislocation, but extends nearly parallel to the strike of the region and has not caused any considerable amount of alteration or disturbance. The following section shows the relations in the Millstone River exposure:

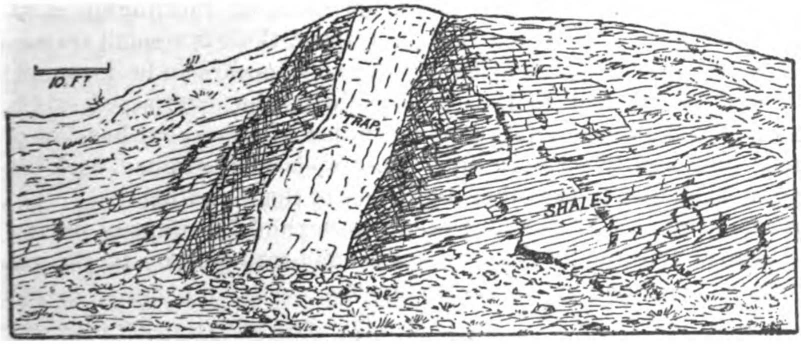

FIG. 47.—Trap dike in bank of canal 2 miles south of East Millstone, New Jersey, looking northeast.

The trap is a fine grained, dark colored rock, with a slight tendency to bedded structure parallel to the walls, and the adjacent shales are darkened and altered in blotchings of black, brown gray, dark red, and dull green.

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[1] Geology of New Jersey, page 204.

Hackensack.—About a mile east of Hackensack, on the road to Leonia, there is a small exposure of trap the exact relations of which could not be definitely determined on account of the drift and debris. It is on the crest of the first ridge east of the Hackensack River, in west-dipping red shales, which are somewhat hardened and darkened in its immediate vicinity. The exposure is about ten feet in width, and could only be traced for a short distance along a north by east course. The exact line of its contact with the shales is not exposed, and it may constitute either an irregular sheet three or four feet in thickness or a dike, as suggested in the following figure:

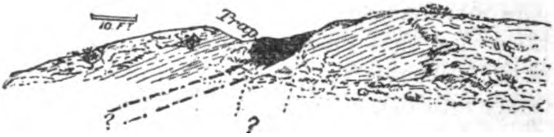

FIG. 48.—Trap sheet or dike two miles east of Hackensack, New Jersey. Looking north.

South Branch.—Five miles southwest of Somerville, on the road from South Branch to Neshanic, and a half mile south of the former place, a small trap dike is inconspicuously exposed. Its thickness is about a foot, and its relations are shown in the following figure:

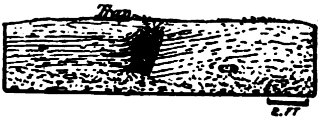

FIG. 49.—Trap dike in shales near South Branch, New Jersey. Looking east.

The rock is a fine grained basalt, greatly decomposed at the outcrop, and although the associated shales are not appreciably altered, those on the northern or upper side are bent upward, as shown in the figure. The strata in the vicinity dip N. 10° E. > 10°, and the dike appears to trend northeast and southwest.

Three Bridges.—About four miles northeast of Flemington, and a half mile northeast of Three Bridges station, there is a small trap outcrop on the road to Centreville. Its extent appears to be inconsiderable, and its relations to the shales could not be determined. It has caused considerable alteration in the adjacent strata, but has not disturbed their gently northern dip. The trap is a fine grained, dark blue-gray rock, similar to the other dike rocks of the formation.

Stanton station.—Midway between Clinton and Flemington, one mile due west of Stanton station, there is a small trap outcrop in the road but its relations and extent are unknown.

SUMMARY.

In their genetic relations, the traps of the New Jersey region belong to two classes; first, the extrusive sheets contemporaneous with the inclosing strata and typified by the great lava flows constituting the

Watchung Mountains; and, second, intrusive sheets and dikes, which attained their present positions subsequent to the deposition of the formation and of which the Palisade trap is a typical example.

The extrusive sheets are characterized by their perfect conformity to the underlying strata, the deep vesicularity and alteration, or slag-like aspect of their upper surfaces, the unaltered and undisturbed condition of the inclosing strata, the presence of trap breccias at the contacts, the altered and frequently vesicular condition of the rock at their bases, the evidence of successive flows, their relations to anterior tuff deposits, and their distinctive columnar structure and petrography.

The intrusive sheets are characterized by irregular lower contacts in which the trap cuts across the ragged edges of the strata for greater or less distances, the intense alteration in the inclosing strata, the increased density and fineness of grain and the bedded structure in the trap near the contacts, and the absence of vesicularity and breccias.

In the Watchung Mountains, erosion, glaciation, and drift cover cause scarcity of outcrops of the original upper surfaces, but there are many localities scattered along their course in which deeply vesicular trap is exposed, and others in which unaltered and undisturbed strata outcrop very near the contact. The only actual overlap well exposed is in the ravine at Feltville, where the trap surface is in greater part vesicular and slag-like and the soft, red argillaceous shales fill the irregularities excepting at one point, where there is an intervening trap breccia filling the interstices in an "Aa"-like portion of the surface.

Contacts of the Watchung traps with underlying strata are exposed at intervals along the outer sides of the ridges and absolute conformity prevails throughout. The trap is frequently vesicular and altered and lies on the unaltered or very slightly altered strata along a straight or gently sinuous line, in one case with a trap breccia intervening.

At two points in its course the second Watchung trap is exposed, overlying beds of loose, eruptive materials, apparently scoria and tuff, and at other localities the sheet is seen to be composed of successive flows, the base of one lying on the vesicular surface of a preceding flow, in one case with an intervening layer of trap breccia at some points.

In thickness the first Watchung trap varies from 450 to 650 feet; the second from 600 to 850 feet; and the third from 225 to 350 feet in the main, and the area inclosed by the outermost hooks is about 500 square miles, no doubt in greater part underlain by trap, so that the Watchung sheets represent lava-flows of no mean volume. Apparently the extrusions were continuous throughout, for, excepting the intercalated breccia above alluded to, no intervening or overlapping sedimentary materials were discovered. The absence of fragmental volcanic deposits, excepting the local beds at the base of the second Watchung sheet, is a noteworthy feature, and the first extrusions were not attended by ejections of scoria, ash, etc., or at most in sufficient amount to extend to the present lines of the outcrop. The eruptions which gave darkened and altered in blotchings of black, brown gray, dark red, and dull green.

Hackensack.—About a mile east of Hackensack, on the road to Leonia, there is a small exposure of trap the exact relations of which could not be definitely determined on account of the drift and debris. It is on the crest of the first ridge east of the Hackensack River, in west-dipping red shales, which are somewhat hardened and darkened in its immediate vicinity. The exposure is about ten feet in width, and could only be traced for a short distance along a north by east course. The exact line of its contact with the shales is not exposed, and it may constitute either an irregular sheet three or four feet in thickness or a dike, as suggested in the following figure:

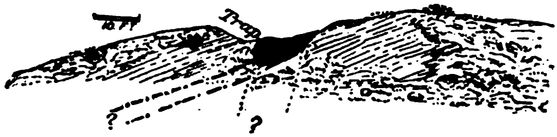

FIG. 48.—Trap sheet or dike two miles east of Hackensack, New Jersey. Looking north.

South Branch.—Five miles southwest of Somerville, on the road from South Branch to Neshanic, and a half mile south of the former place, a small trap dike is inconspicuously exposed. Its thickness is about a foot, and its relations are shown in the following figure:

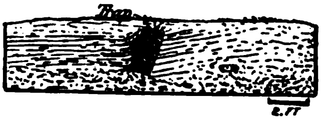

FIG. 49.—Trap dike in shales near South Branch, New Jersey. Looking east.

The rock is a fine grained basalt, greatly decomposed at the outcrop, and although the associated shales are not appreciably altered, those on the northern or upper side are bent upward, as shown in the figure. The strata in the vicinity dip N. 10° E. > 10°, and the dike appears to trend northeast and southwest.

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The intrusive sheets are characterized by irregular lower contacts in which the trap cuts across the ragged edges of the strata for greater or less distances, the intense alteration in the inclosing strata, the increased density and fineness of grain and the bedded structure in the trap near the contacts, and the absence of vesicularity and breccias.

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At two points in its course the second Watchung trap is exposed, overlying beds of loose, eruptive materials, apparently scoria and tuff, and at other localities the sheet is seen to be composed of successive flows, the base of one lying on the vesicular surface of a preceding flow, in one case with an intervening layer of trap breccia at some points.

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The great hooks characterizing the southernmost outcrops of the Watchung traps are entirely due to flexure, and the bowed course of their northern terminations and of Towakhow Mountain are due to the same cause.

In the vicinity of Paterson the first Watchung trap lies on conglomeratic members, apparently representing the base of the formation, separated from the younger members eastward by a great fault amounting to at least 2,000 feet. It would appear from this that the formation thickens southward, for, at the southern hook the trap lies on a thickness of at least 1,500 feet of fine grained strata of which the lowermost members must be some distance above basal beds.

The New Vernon trap, across the Great Marsh from the Watchung Mountains, is apparently an extension of one of the Watchung flows brought up by the partial quaquaversal which determines its crescentic course, and it is similar to them in every respect, but not so well exposed for study, while the New Germantown traps farther southwestward, but at the same horizon, are undoubtedly extrusive and may be remnants of another extension of the Watchung flows.

The palisade trap is the best exposed instance of intrusion on a large scale in New Jersey, and although it is in greater part an essentially conformable sheet throughout, the supply dike from which the sheet extends eastward up the dip, reaches the surface northwest of Hoboken and in Rockland County, New York, along the inner side of the ridge.

For many miles along the Hudson River the palisade sheet is exposed in contact with the underlying strata near the base of the formation, and while the relations are essentially conformable throughout, local irregularities are frequent in which the ragged edges of the strata are crossed laterally up or down for over 150 feet in one instance, and trap offshoots are sent down or out into the underlying beds. In the vicinity of Haverstraw the crescentic course of the dike causes a corresponding deflection of the line of outcrop, and although this is greatly aided by the structure of the underlying beds and possibly by faults, the base of the sheet has to cross the strata for several hundred feet in order to preserve its position above the surface, and at its terminal outcrop, an occurrence of vesicular rock, suggests that the sheet was finally extruded.

At its contacts with inclosing strata the palisade trap becomes fine grained, very dense, and bedded in structure, and the sedimentary rocks are darkened and hardened often to a considerable distance.

A short distance west of the palisade trap, near the latitude of the city of New York, are the posterior trap masses of Granton and Snake

Hills, similar structurally to the palisade trap in consisting of a dike, and a sheet extending eastward up the dip.

While it seems probable that the palisade trap continues southward to reappear in the series of outcrops which extend from Lawrence Brook through Rocky Hill and Pennington Mountain to Bald Pate and Jericho Hill on the Delaware, it is possible that it is due to an entirely separate intrusion. The trap of this series of outcrops from Lawrence Brook to Jericho Hill is similar to the palisade sheet structurally and petrographically, and is apparently a continuous mass not reaching the surface in the gaps that isolate Pennington Mountain. It is heavily flanked with indurated shales and crosses the strike of the inclosing strata, both at intervals in its westerly course and in the hooked outcrop of Ten Mile Run Mountain.

Sourland Mountain consists of a thick sheet of coarse grained diabase, heavily flanked by highly indurated shales, and follows the strike of the inclosing strata excepting in a local bowing near the center of its course where it crosses and recrosses the strike for a short distance.

Cushetunk and Round Mountains are the remnants of a wide, thick, intrusive sheet considerably flexed, and eroded through at the anticlinals so as to give the singular horseshoe-shaped course to Cushetunk Mountain and isolation to Round Mountain. The indurated strata associated with this trap are crossed by it at some points, and along the western border for a short distance the edge of the sheet overlaps the lower Paleozoic limestones and presents some evidence of having been extrusive.

The smaller trap masses along the Delaware, at Belle Mountain, Brookville, and Point Pleasant are all local intrusive sheets intercalated between highly altered strata, and near Neshanic, Martin's Dock, and Arlington are other intrusive sheets, finely exposed in cross-section. The other trap masses in the New Jersey region are some small sheets and dikes near and northeast of Flemington, the dike so finely exposed near Blackwell's Mills, the dike near Hackensack, and the sheets south of New Brunswick.

The ages of the intrusive sheets of the formation are difficult to estimate. Davis has called attention to the raggedness of some of the contacts as evidence that the intrusion was effected before the development of joints by the uplift of the formation, and this certainly seems very probable.

As the stratigraphy of the Jura-Trias of the New Jersey region is not worked out, the horizons of the trap masses are not known, and the sequence of their intrusion is indeterminable from any evidence now in hand. The palisade trap lies just above the basal arkose, which is known to overlap the crystalline rocks in wells in Jersey City, and as the first Watchung trap lies on basal beds near Paterson, it might be suggested that the two sheets are not far distant in horizon, but in the absence of definite knowledge of the comparative age of the basal rocks at Paterson, and the structure and configuration of the buried Newark shores in the intervening region, the relative positions of the two sheets can only be conjectured.

At Lawrence brook the supposed southward continuation of the palisade trap is not far above the base of the formation, but in Ten Mile Run Mountain and Rocky Hill the strata are crossed so that at the Delaware the sheet is apparently 10,000 feet above the Trenton gneisses, but probably there are intervening faults which might decrease this estimate very greatly.

Sourland Mountain trap is apparently high in the formation but its exact or relative horizon can not be determined until the stratigraphy and structure of the region can be worked out, and the same is the case with the other traps of the Delaware region, and the Cushetunk and the Arlington traps.

BIBLIOGRAPHY.

(The following references are solely to papers or parts of papers relating to the traps of the New Jersey region:)

AKERLY, SAMUEL. An essay on the geology of the Hudson River and the adjacent regions. New York, 1820, pp. 69, pl. 12°.

Gives a general sketch of the extent and salient features of palisade rocks, pp. 27–34, and a section along the Hudson River, showing the relations of the underlying strata at some points. Refers to the occurrence of amygdular rock and "rocks resembling volcanic scoria," near the falls of the Passaic. Discusses the nature of the Palisade and Newark Mountains, and seems inclined to consider them volcanic, pp. 62–64.

BRITTON, NATHANIEL L. On the geology of Richmond County, New York. Annals New York Acad. Sci., vol. 2, 1881, pp. 161–182, 2 pls.

Describes the outcrops of the trap, p. 169, and shows its extent on the map, plate 15.

COOK, GEORGE H. Geology of New Jersey. 1868, pp. 176–194, 195, 200, 201, 202–205, 207, 215–218, 230, 231, 337, 676–679.

Principally devoted to a detailed description of boundaries, the position of contact lines, and topography, pp. 176–194. Calls attention to the cause of the peculiar topography of Sourland Mountain, pp. 191, 192; the anticlinal structure in Round Valley, p. 193; bedded structure in trap at Martin's Dock, Belleville, and near Plainfield; columnar structure in Morris Hill, Paterson, and elsewhere, and trap dikes at Blackwell's Mills, Flemington, and near New Brunswick. Gives a cross-section of the palisade trap, p. 200, and discusses the mode of its intrusion. Gives list of joints in Bergen Hill, pp. 202–205. Describes and gives analyses of some of the traps of each the principal trap masses, pp. 215–218. Discusses the genesis of the traps and their relative ages, p. 337. In describing copper ores of the formation, pp. 676–679, refers to trap at the Schuyler mine and the exposures of base of first Watchung trap in mines near Plainfield and Somerville. On the accompanying map the trap boundaries are shown and cross-sections given across the formation.

——— Geological survey of New Jersey. Annual report of the State geologist for the year 1874, pp. 56, 57.

Announces discoveries of grains of metallic iron in trap of Bergen Hill.

COOK, GEORGE H. Geological survey of New Jersey. Annual report of the State geologist for the year 1879, pp. 20, 32, 34.

Includes a general statement of the distinctive features of the trap outcrops Calls attention to an exceptional instance in which curved outcrop is not due to flexure in the great hook of the Palisade Mountains in New York, "where the trap has broken directly across the beds of stratified sandstone," p. 32. Considers all the traps intrusive.

——— Geological survey of New Jersey. Annual report of the state geologist for the year 1881, map in pocket. Shows the trap boundaries.

——— Geological survey of New Jersey. Annual report of the State geologist for the year 1882, pp. 19, 22, 23, 31, 32, 43–66, map in pocket. The descriptions of the traps in this report, covering 23 pages, consist mainly of brief references to the more general features of the outcrops, their extent, topography, rocks, columnar structure, nature of the exposures, and the alteration and some of the relations of the associated sedimentary members, but in some cases the structural relations are briefly considered as follows:

Palisade trap.—Description and photo-lithograph of relations at Weehawken. Notes overlying strata at Homestead station and Alpine, the frequency of lower contacts, the occurrence of sandstone between trap outcrops at Bayonne City and in Bergen cut, and estimates the maximum thickness of the trap at 400 feet at Alpine and 200 feet at Weehawken.

Snake Hills.—Notes occurrence and dips of adjoining shale outcrops, and considers it probable that the trap has broken across the strata.

Watchung Mountains.—Discusses connection with traps of Ramapo Valley. Calls attention to the parallelism of outcrops to strike; some of the relations of underlying strata at Paterson, Plainfield, and Somerville; the elevation of contact line in outer side of First Watchung Mountain; overlying rocks near Warrenville; the shale fragments near Mount Horeb, in the Second Watchung Mountain, indicating the possibility of an interval between the two sheets of trap rock lower contacts and columns near Little Falls, and the occurrence of cellular rock surface in some places along western slopes on the ridges.

Pompton, Preakness, and Hook Mountains, Riker's Hill and Long Hill.—Calls attention to some relations of underlying strata near Pompton, in Hook Mountain and Long Hill, occurrence of cellular rock on back of the ridge near Mountain View and outliers of trap west of Pompton Plains. Estimates the thickness of the trap near Vreeland's quarry as at least 300 feet. Discusses cause of the east and west ridge of Hook Mountain, and considers it due to "a series of off-setting northeast and southwest dykes connected by outflows through fractures across the strata."

Basking Ridge trap.—Calls attention to the uncertainty of its boundaries and to the occurrence of an outlier near Bernardsville, naving cellular rock on its eastern slope.

New Vernon trap.—Refers to outcrops of cellular rock on its surface at some points, and is of the opinion that the trap has broken across the strata through part of its course.

Martin's Dock trap.—Description and photolithograph of the outcrop and references to the trap exposed south of New Brunswick. Calls attention to belt of indurated shales crossing the Raritan below Martin's Dock.

Ten Mile Run.—Rocky Hill trap. Calls attention to the unconformity of intrusion indicated by the curved course of these outcrops.

Sourland Mountain.—Refers to some structural features and the alteration in the strata along its flanks.

Point Pleasant trap.—Discusses its extent underground and states opinion that there are two sheets.

Cushetunk Mountain.—Considers trap unconformable to strata at some points, and to have been intruded along axial lines.

COOK, GEORGE H.—Continued.

New Germantown trap.—Considers trap unconformable at some points.

The trap boundaries on the map only differ from those on the map issued with the preceding report in having the New Vernon outcrops continuous.

——— Geological survey of New Jersey. Annual report of the State geologist for the year 1883, frontispiece, pp. 22–25, 164–166.

Reviews Davis's conclusions in regard to the extrusive nature of the Watchung traps and states his opinion that all the traps of the New Jersey region "were intruded after the sedimentary rocks had been elevated to their present inclined position." Describes a lower contact of the second Watchung sheet at Haledon and gives a photolithograph of the exposure. Calls attention to altered strata associated with the Lawrence Brook, Ten Mile Run, Sourland Mountain, Palisade and Schuyler Mine traps as noted in the report for 1882, and on the back of First Watchung Mountain near Pluckamin, Feltville, and Warrenville. Does not consider the occurrence of cellular trap a decisive proof of extrusion and thinks the curved courses of the traps indicative of intrusion.

——— Geological survey of New Jersey. Annual report of the State geologist for the year 1884, frontispiece, pp. 23–28.

Description and photolithographs of the columnar trap near Orange. States opinion that the trap is intrusive and suggests the possibility that the small-columned rock represents the edge of a separate sheet. Calls attention to the occurrence of cellular trap on the back of the First Watchung Mountain at the Orange water-works.

——— Geological survey of New Jersey. Annual report of the State geologist for the year 1885, p. 122.

Refers to a well 297 feet deep in the palisade trap in Union, and one near Montclair through the first Watchung trap into the underlying sandstones.

——— Geological survey of New Jersey. Annual report of the State geologist for the year 1886, pp. 125–127.

Discusses briefly the nature of the traps and states his opinion that all are intrusive, excepting perhaps, locally, where they may have reached the surface and overflowed.

——— and **SMOCK, JOHN C.** Geological survey of New Jersey. Map of northern New Jersey, 1874.

Shows the trap areas of northern New Jersey and Rockland County, New York, and gives a cross-section from Jersey City to Morristown, showing the structural relations of the Palisade and Watchung traps.

COOPER, T. On volcanoes and volcanic substances, with a particular reference to the origin of the rocks of the floetz trap formation. Am. Jour. Sci., vol. 4, 1822, pp. 205–243.

Describes the occurrence of columnar and amygdular "basalt" at the falls of the Passaic and is of the opinion that it was poured out over "the old red sandstone" and similar in nature and origin to the other traps of the New Jersey region.

COZZENS, ISSACHAR, Jr. A geological history of Manhattan or New York Island, New York, 1843, pp. 114, pl. 9, 8°.

Gives a section along the Hudson from Jersey City to Weehawken, showing the position of the Palisade trap and underlying strata, plates 2, 3, and a section at Pompton across the third Watchung trap, pl. 8. Refers to the Palisade and Watchung traps as unconformable volcanic rocks, p. 111, and describes the columnar structure and extent of the former, p. 48.

CREDNER, HERMANN. Geognostische skizze der Umgegend von New York, Zeitschr. Deutsch. geol. Gesell., vol. 17, 1865, pp. 388–398, pl. 13.

Describes some of the more obvious features of the Palisade, Staten Island and Snake Hill trap outcrops. Considers palisade trap intrusive and the Snake Hills due to offshoots from the main trap mass.

DARTON NELSON H. On the disintegrating sandstones of New Durham, New Jersey. Trans. New York Acad. Sci., vol. 2, 1883, pp. 117-119.

Describes the relations and lithology of the strata lying against the back of the dike of the palisade trap in the cut at the west end of the West Shore Railroad tunnel at Weehawken.

DAVIS, WILLIAM MORRIS. Brief notice of observations on the Triassic trap rocks of Massachusetts, Connecticut, and New Jersey. Am. Jour. Sci., 3d series, vol. 24, 1882, pp. 345-349.

Refers to the palisade trap as undoubtedly intrusive and the trap of the Watchung Mountains as probably extrusive. Calls attention to the breaking of the dikes and intruded sheets across the strata without relation to the present joint planes as evidence indicating that the intrusion was effected before the formation was tilted.

——— The structural value of the trap ridges of Connecticut Valley. Proc. Boston Soc. Nat. Hist., vol. 22, 1882, pp. 116-124.

Refers to some general features of the trap ridges, and instances the palisade trap as a typical intrusive sheet.

——— On the relations of the Triassic traps and sandstones of the eastern United States. Bull. Mus. Comp. Zoöl., Harvard College, vol. 7, No. 9, 1883, pp. 249-309, pl. 9-11.

Besides a general review of former opinions on the subject, describes a series of typical localities in New Jersey, pp. 269-279, and discusses the evidence indicative of the intrusive origin of the trap of the Palisade, Sourland Mountains, Martin's Dock, Point Pleasant, etc., pp. 244-295, 296, 301, and the extrusive nature of the Watchung traps, pp. 291, 294, 300, 302.

Palisade trap.—Describes upper contact near Englewood, lower contact at Fort Lee, and the unconformity and indurated shales at Weehawken. Suggests that King's Point and the occurrence of sandstones in the Bergen Cut are due to faulting.

Watchung traps.—Describes lower contact at Paterson, faults in Garret Rock, amygdular and ropy trap surface southwest of Paterson, lower contacts and tuff deposits at Little Falls, and the surface of the first Watchung trap in contact with overlying unaltered shales and breccia at the Feltville locality, indicating the extrusive nature of the sheet. Suggests that irregularities in columnar structure of First Mountain may be due to successive flows, p. 300.

Martin's Dock.—Detailed description.

Point Pleasant Station.—Describes main trap mass south of the station, and six others in the shales northward.

EMMONS, EBENEZER. Agriculture of New York, vol. 1, 1846, p. 200, map.

Gives a section of the Palisades near the State line, and states that the intrusive nature of the trap is indicated by the manner in which it is intercalated in the sandstone layers and by the alteration that it has produced.

GRATACAP, LOUIS P. Fish remains and tracks in the Triassic rocks at Weehawken, New Jersey. Am. Naturalist, vol. 20, 1886, pp. 243-246, pl. 12, 13.

Describes strata underlying the palisade trap at the locality, and gives a section showing the position of the contact line in the entrance of the West Shore Railroad tunnel.

HAWES, GEORGE W. On the mineralogical composition of the normal mesozoic diabase upon the Atlantic border. 1881. Proc. U. S. Nat. Mus., vol. 1, 1881, pp. 129-134.

Gives as results of a mineralogic analysis of trap from Bergen Hill, p. 131.

HEILPRIN, ANGELS. On a remarkable exposure of columnar trap near Orange, New Jersey, 1885, Proc. Phila. Acad. Sci., 1884, pp. 318-320, pl. 8.

Gives a description and sketch of the columns and discusses columnar structure.

IDDINGS, JOSEPH P. The columnar structure in the igneous rock on Orange Mountains, New Jersey. Am. Jour. Sci., 3d series, vol. 31, 1886, pp. 321–331, pl. 9.

Describes and figures the columns and discusses the origin and nature of columnar structure. Shows that the variations in structure are not indicative of successive sheets and gives an account of the petrography of the rock, the glassy nature and disposition of the columns of which are thought to indicate a surface flow and not an intrusion.

KITCHELL, WILLIAM. Second annual report of the Geological Survey of New Jersey, 1856, p. 145.

Calls attention to the occurrence of trap near Jacksonville, along the highland border.

LEWIS, H. CARVILL. A great trap dike across southeastern Pennsylvania. Proc. Am. Phil. Soc., vol. 22, 1885, pp. 438–456, map.

Describes the extension of the Bald Pate, Belle Mountain, Sourland Mountain, and Point Pleasant traps into Pennsylvania, and some of the relations of the Brookville trap and the great medial fault in New Jersey.

MATHER, WILLIAM W. Geology of New York, First Geological District, 1843, pp. 278–283, 627, pls. 1, 5, 34, 45.

Describes the palisade trap in Rockland County and Staten Island, some of the irregularities of lower contact along the Hudson River south of Haverstraw, and the alterations of the underlying strata, pp. 278–282. Considers the trap an ancient lava, "that has flowed through the rocky fissures in dikes, while this portion of the continent was still beneath the waters of the ocean," and similar in origin and relations to the other traps of the New Jersey region, p. 283. It is thought that the trap was "probably erupted at the epoch of the marl and green sand deposits of New Jersey," p. 627.

PIERCE, JAMES. Account of the geology, mineralogy, scenery, etc., of the secondary region of New York, New Jersey, and the adjacent States, 1820. Am. Jour. Sci., vol. 2, pp. 181–199.

Describes the general features of the more prominent trap masses of the New Jersey region, especially the Palisade and Newark Mountains.

ROGERS, HENRY D. Report on the geological survey of the State of New Jersey, 1836, pp. 188, pl., 8°, Philadelphia.

All the information in regard to the traps in this report is republished with additions in the report for 1840, excepting a plate of sections showing the supposed relations of the larger trap masses.

——— Description of the geology of the State of New Jersey, being a final report; Philadelphia, 1840, pp. 301, map, pl., 8°.

Briefly describes the course, topography, and rocks of the principal trap masses of New Jersey, the altered strata at Lambertville, New Hope, The Swamp, Lawrence Brook, on back of First Watchung Mountain northwest of Plainfield (at Feltville), Rocky Hill, Moore's Creek, Sourland Mountain, and Point Pleasant, and the contacts at Paterson, Little Falls, and the copper mines near Somerville. Discusses the relations of the traps to the sedimentary members, the date and mode of extrusion, induration, and the origin of the copper ores, pp. 114-171, map, plate.

RUSSELL, ISRAEL C. On the intrusive nature of the Triassic trap sheets of New Jersey. Am. Jour. Sci., 3d series, vol. 15, 1878, pp. 277–280.

Refers to alteration of strata underlying the palisade trap at Paterson and near Plainfield, and describes a locality near Feltville where the bossy, vesicular surface of the first Watchung trap is exposed, overlain by highly altered shales and a thin bed of metamorphosed limestone. Calls attention to the occurrence of the trap breccia and suggests that it may "have a history somewhat similar to that of the 'friction breccias' mentioned by Van Cotta," considers the curved courses of some of the New Jersey traps indicative of unconformable intrusion.

RUSSELL, ISRAEL C. On the occurrence of a solid hydrocarbon in the eruptive rocks of New Jersey. Am. Jour. Sci., 3d series, vol. 16, 1878, pp. 112–114.

Describes the albertite-like substance occurring in elongated vesicles, in the trap at the locality described in the preceding paper, and discusses its origin.

——— The physical history of the Triassic formation of New Jersey and the Connecticut Valley. Annals, New York Acad. Sci., vol. 1, 1878, pp. 220–254.

Includes some general statements in regard to the relations and nature of the traps and a discussion of their supposed former connection with those of the Connecticut Valley region.

——— The geology of Hudson County, N. J. Annals, New York Acad. Sci., vol. 2, 1880, pp. 27–80, pl. 2.

Describes contacts and their irregularities at the base of the palisade trap along the Hudson from Jersey City to Bull's Ferry, the dike at Guttenberg and some of the relation at Snake Hill. Gives an ideal section of the palisade trap and its supposed offshoots, to which Snake Hills, Fairmount, King's Point sheet, and the posterior ridge of Bergen Hill are thought to be due. Alludes to occurrence of trap at the Schuyler mine, and describes the fault rock and its supposed metamorphism in the cut west of Arlington.

——— On the former extent of the Triassic formation of the Atlantic States. Am. Naturalist, vol. 14, 1880, pp. 703–712.

Includes general statements in regard to the palisade and Watchung traps and allusions to the evidence of their intrusive nature. Calls attention to altered strata on top of First Watchung Mountain along Johnson's drive near Plainfield, New Jersey.

WURTZ, HENRY. Progress of an investigation of the structure and lithology of the Hudson River palisades. Proc. New York Lyceum, vol. 1, 1871, pp. 99–105.

Advances the hypothesis that the palisade trap is a metamorphic rock throughout, and appears to consider the other traps of similar nature, excepting that of the First Newark Mountain, which it is suggested may be eruptive in part. Considers the highly altered strata underlying the palisade trap transition beds. Describes the petrography of the trap of Bergen Hill.

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EARTHQUAKES IN CALIFORNIA

IN

1889

BY

JAMES EDWARD KEELER
ASTRONOMER IN CHARGE OF EARTHQUAKE OBSERVATIONS, LICK
OBSERVATORY

WASHINGTON
GOVERNMENT PRINTING OFFICE
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EARTHQUAKES IN CALIFORNIA IN 1889.

BY J. E. KEELER.

INTRODUCTION.

The following paper is a continuation of the list of earthquakes in California, published by Prof. E. S. Holden, containing all the available data up to the end of the year 1888,[1] and it brings the list up to the end of 1889. It contains all the shocks recorded or felt on Mount Hamilton, and all those reported to the Lick Observatory by letter, as well as newspaper reports of such earthquakes as occurred in the State during that year. No systematic examination of the newspapers has been made, however, and reports may have escaped notice.

The instruments used for recording earthquakes on Mount Hamilton are described in vol. 1, publications of the Lick Observatory, p. 82. The largest and most complete instrument records the north and south, east and west, and vertical components of the earth's motion separately on a smoked-glass plate, which is started by the preliminary tremors of the earthquake and rotates uniformly in about three minutes, the edge of the plate being graduated into seconds at the same time by a clock, which also serves to record the time of occurrence of the shock. This instrument has been called the Ewing seismograph in the notes. Another simpler form consists of a heavy "duplex" pendulum adjusted to a long period of vibration, with a magnifying pointer or pen, which records on a smoked glass plate both horizontal components of the motion. The vertical component and the time are not recorded.

The observatory possesses other seismographs of various patterns, but they are not constantly in use.

SCALE OF MEASUREMENTS.

In the record made by the Ewing seismograph both horizontal components are magnified 3.3 times, and the vertical component is magnified 1.6 times. The measures of the vibrations as given in the notes are taken directly from the tracings, and therefore represent the magnified motion.

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[1] List of recorded earthquakes in California, Lower California, Oregon, and Washington Territory. Sacramento: State Printing Office. (1887.)

Earthquakes in California, (1888). Am. Journal of Science, vol. 37, May, 1889.

If both the period T and the amplitude a of an earthquake wave are given, the maximum acceleration due to the impulse, which may be taken as a measure of the intensity or destructive effect of the shock, is given by the formula—

$$I=\frac{4\pi^2 a}{T^2}$$

in which the motion is assumed to be simple harmonic.

DIFFERENCES OF INTENSITY.

Estimates of the intensity of shocks are also given (in Roman numerals inclosed in parentheses) according to the Rossi-Forel scale, which for convenience of reference is here inserted. Prof. Holden has suggested that for observations in California (only) a few additions should be made to this scale, and his suggestions are printed here *in Italics.* When these are in quotation marks they refer to expressions used in the newspapers, etc., in describing earthquake shocks.

I.

Microseismic shock recorded by a single seismograph, or by seismographs of the same model, but not putting seismographs of different patterns in motion; reported by experienced observers only.

II.

Shock recorded by several seismographs of different patterns; reported by a small number of persons who are at rest. *"A very light shock."*

III.

Shock reported by a number of persons at rest; duration or direction noted. *"A shock;" "a light shock."*

IV.

Shock reported by persons in motion; shaking of movable objects, doors and windows; cracking of ceilings. *"Moderate;" "strong;" "sharp"* (sometimes); *"light."*

V.

Shock felt generally by every one; furniture shaken; some bells rung. *Some clocks stopped; some sleepers waked; "smart;" "strong;" "heavy;" "severe;" "sharp;" "quite violent."*

VI.

General awakening of sleepers; general ringing of bells; swinging of chandeliers; stopping of clocks; visible swaying of trees; some persons run out of buildings. *Window-glass broken; "severe;" "very severe;" "violent."*

VII.

Overturning of loose objects; fall of plaster; striking of church-bells; general fright, without damage to buildings. *Nausea felt; "violent;" "very violent."*

VIII.

Fall of chimneys; cracks in the walls of buildings.

IX.

Partial or total destruction of some buildings.

X.

Great disasters; overturning of rocks; fissures in the surface of the earth; mountain slides.

The relation between the intensity (I) of a shock as determined by the formula already given, and the numbers of the Rossi-Forel scale, has been deduced from all available data up to 1888, by Prof. Holden, and is given below in tabular form.

Rossi-Forel scale.	Intensity.	Diff.
	mm *per sec.*	
I	20	
II	40	20
III	60	20
IV	80	20
V	110	30
VI	150	40
VII	300	150
VIII	500	200
IX	1,200	700

One of the objects of the earthquake observations on Mount Hamilton is to obtain data for correcting this table, so that the intensity of a shock as defined mathematically by the formula $I=\frac{V^2}{a}$ can be inferred from the ordinary description of its effects. On referring to the list it will be seen that for those occasions on which records were obtained with the Ewing seismograph, the computed intensity always falls considerably below the corresponding number of the Rossi-Forel scale, obtained at the same time by an independent estimate. This is probably due to the fact that the period of the undulation has a great effect in determining the intensity, as will be seen from the formula, where T enters the denominator in the second power. Many small waves with short periods might give a greater value of I than the maximum wave measured. The motion is far from being simple harmonic.

The following are the only shocks in 1889 which give a means of comparing the two scales:

Date.	Computed intensity.	Estimated intensity.
April 3, 2:29 a. m.	7.0=(I)	(II)
April 14, 7:28 p. m.	4.0=(I)	(III)
May 26, 7:13 a. m.	2.5=(I)	(II)
June 10, 7:34 a. m.	12.=(I)	(II)
July 25, 10:8 p. m.	53=(II-III)	(V) E. S. H., (IV) J. E. K.,
July 31, 4:47 a. m.	88=(IV+)	(V) E. S. H.

As these are the only earthquakes observed in both ways, a comparison of the scales will be deferred until more data shall have accumulated.

A number of duplex-pendulum seismographs, quite similar to the one used at the Lick Observatory, are placed at different points on the Pacific coast, but they are not all in operation. The stations from which reports have been received during the year 1889 are as follows:

Student's Observatory, Berkeley, in charge of Prof. Soulé.

Chabot Observatory, Oakland, in charge of Mr. Burckhalter.

Private observatory of Mr. Blinn, in East Oakland.

Observatory of the University of the Pacific, San José, in charge of Prof. Higbie.

Observatory of Mills College, near San Francisco, in charge of Prof. Keep.

Office of State Weather Bureau, Carson, Nev., in charge of Prof. Friend.

Much of the completeness of the reports is due to Mr. F. G. Blinn, who has not only furnished the records of his own instrument, and careful observations made by himself, but has collected information from various reliable sources and sent it to this observatory. I have also to thank the officers of the Geological Survey for the insertion of a number of reports furnished by the Light-House Board and the U. S. Signal Service.

CHRONOLOGIC RECORD.

1889. January 19, 1:43 a. m. Oakland.—A slight shock recorded on the seismograph of F. G. Blinn. (II.)

January 22, 7:51:58 p. m. (?), Mount Hamilton.—A very light shock suspected by C. B. Hill (I ?). No record was found on the seismographs.

February 6, 9:20 p. m. Southern California.—A distinct shock at 9:25 p. m., shaking buildings and causing people to run into the streets. Vibrations from north to south, lasting about ten seconds. (VI.) San

Bernardino papers. Colton: Two distinct shocks at 9:20 p. m. Los Angeles: Slight shock at 9:25 p. m. Shock accompanied by distinct dull rumbling. Post-office clock at San Bernardino stopped at 9:20:30, subject to an error of five or six seconds. The clock faced the east. W. C. Parmley, San Bernardino. At Kodiac Island earthquake waves were recorded from February 5, 9 p. m., to February 6, 7 a. m.

April 3, 2:29 a. m. Mount Hamilton.—A slight record was made on the Ewing and duplex pendulum seismographs. (II.) The greatest motion was from north to south, a very slight motion from east to west, and the vertical component was imperceptible. The maximum (magnified) amplitude was about one-fourth millimeter, and the period of a vibration about two-thirds of a second; hence, the computed intensity is 7.0 or (I) by the Rossi-Forel scale. This shock was not felt by any body at the observatory. The time given is that recorded by the seismograph clock.

April 14, 7:28 p. m. Central California.—Lick Observatory, time of ending 7:27:56 (E. S. Holden), 7:28¼ (E. E. Barnard). Felt by many persons at the observatory, but not by all. Recorded on both seismographs. (III.)

The curve representing the north and south motion on the Ewing seismograph begins with three quite regular waves of progressively diminishing amplitudes, the period of each being 1.25 seconds. The maximum (magnified) amplitude is 0.5 millimeters. The east and west curve begins with a series of small, irregular tremors, followed by two marked and fairly regular waves which begin about where the waves of the north and south curve end. Maximum (magnified) amplitude, 0.4 millimeters. The vertical motion is very slight. The marked vibrations on all the curves end at about ten seconds, but very slight undulations extend to about one and one-half minutes. It is hard to say how much of these is real. The intensity of this shock, computed from the data above given, is 4.0 or (I) of the Rossi-Forel scale.

San José, 7:27:30 (S. W. Burnham). San José, University of the Pacific.—The record on the duplex pendulum seismograph at this place is considerably larger than that obtained at the Lick Observatory, and is very complicated. The San José Times says: "The shock was not severe but was quite plainly felt by many people. A majority of people, however, were unconscious of anything unusual."

Santa Cruz.—Quite a severe shock, with quick, jerky motion from east to west, rattling the windows in loosely built houses. Time, 7:25. Probably the heaviest shock felt in Santa Cruz in four or five years, although many people on the first floor of well built houses did not notice it.—Santa Cruz Surf.

An earthquake occurred at 7:30 p. m. The vibration was north and south and lasted several seconds.—Dispatches from Santa Cruz.

Centerville.—Slight earthquake at 7:34. Vibrations northeast to southwest.

Los Gatos.—Two slight but distinct earthquakes at about 7:15. Vibrations from south to north.

Gilroy.—Remarkably sharp but short earthquake at 7:25, making lamps, crockery, etc., rattle severely.

Merced.—A heavy, double-shock earthquake at 7:33. Oscillation, northwest to southeast, and about two seconds in duration.—Dispatches to San Francisco papers.

Oakland.—Earthquake at about 7:28, not felt by all persons.—F. G. Blinn. The record on Mr. Blinn's seismograph shows about the same amount of motion as at the Lick Observatory.

April 17, 8:32:38 p. m. Mount Hamilton.—Noted by J. M. Schaeberle, while observing the collimation constant of the meridian circle. The wires vibrated through about 10″. Time noted, 8:32:40. Suspected in another part of the building by J. E. K. Time noted, 8:32:36. No perceptible record on the seismographs. (I.)

April 20, 4 a. m. University of the Pacific, San José.—Prof. Higbie sends a record obtained with his seismograph, showing a considerable disturbance. I have no other notices of this earthquake.

April 24. San Francisco.—"Heavy earthquake shock occurred at 3:37 a. m. Vibrations from north to south."—Jenkins. Received at Washington Signal Office by General Greely.

May 1. Lompoc.—Quite a heavy earthquake shock was felt here at 11:55 to-day. The vibrations were from east to west. No damage was done.

Susanville.—At 9 o'clock a sharp earthquake was experienced. The vibration was north and south.

May 19, 3:10 a. m. Central California.—At the Lick Observatory nobody was awakened, although the motion as registered by the seismographs was considerable. This is probably owing to the long period of the vibrations. The time recorded by the earthquake clock was 3:9:6.

The following letter was furnished by Prof. Holden to the California Associated Press:

> Lick Observatory.—The earthquake was felt at the Lick Observatory at nine minutes past 3 o'clock this morning, as a series of gentle shocks of small amplitude and slow period. It was not severe enough to awake the sleepers. The extraordinary feature of this shock was its great duration, which is registered on our instruments for no less than two minutes and twelve seconds. In this feature it resembles the great Inyo shock of March 26, 1872, as experienced in San Francisco, and for a similar reason. The observing station was in both cases far removed from the origin of the shock, and the energy of the earthquake was manifested in long waves of slow period, but lasting for an unusual time. Moreover, in this case the shock was far more severe in Santa Clara Valley than after it had traversed several ranges of hills and reached Mount Hamilton. Our earthquake machine shows that the up and down movement lasted eighty-four seconds. The period of each wave was about 1.7 seconds, which is very gentle and slow, and the double amplitude of the vertical waves was never more than 0.03 of an inch. The east and west movement consisted of strong tremors for nearly four seconds, when the waves began and lasted as strong

decided movements for twenty-nine seconds, after which the tremors continued until their trace was lost. Ninety seconds after the beginning, the period of these waves is 0.8 of a second (very slow) and the double amplitude is about 0.03 of an inch. The most remarkable motions were in the north and south direction. The tremor was felt for three seconds, ten large waves for forty-five seconds succeeded by tremors until one hundred and thirty-two seconds from the beginning. Their period was 0.6 of a second. The double amplitude is 0.05 of an inch. The duplex machine shows results agreeing with the above and indicates the very complex nature of the motion of the ground.

The vibration of greatest amplitude occurred only five seconds after the plate of the Ewing seismograph started, and is nearly as great in the east and west as in the north and south curve, while the vertical component is small. Paying due regard to the values of the different components, it appears that the maximum vibration (double amplitude) of the earth at the Lick Observatory was 2.2 millimeters, and the period being 0.6^s as stated above, the computed intensity of the shock is 120 or (V) of the Rossi-Forel scale.

Yerba Buena Island Light Station, San Francisco Bay; time, 3:14 a. m.—On a hill 220 feet above sea-level; going from dwelling to light-house to visit light when shock was observed; clay surface, 4 feet to solid rock; everybody else at rest; one shock only; from eight to twelve seconds duration; one long, rolling shock with a sort of jumping motion also, but it still can only be called one shock; 3:14 a. m.; light-house clock did not stop; the motion was certainly from east to west; no damage.—J. A. F. McFarland.

Mare Island Light Station; time, 3:9:30 a. m.—Observer was awakened from a deep sleep on second floor of wooden building with brick foundation on clay. The shock was intermittent; sudden force slightly diminishing and then increasing and slowly dying away; the windows rattling; door-bell rang in a house near by.—Kate C. McDougal, light keeper.

Berkeley.—In the valleys the shock was more severe. The seismograph tracing of the university observatory at Berkeley shows a very complex curve, which can be roughly bounded by an ellipse 8 by 6 millimeters, with one great loop extending 7 millimeters farther (magnified four times).

Oakland.—The Chabot Observatory record has some resemblance to the above, but is larger, the bounding ellipse being 22 millimeters long, also with a loop extending toward the northwest. The mean-time clock of the Chabot Observatory stopped at 3:01:44. Error of clock inappreciable.—C. Burckhalter.

East Oakland.—The record obtained at Mr. Blinn's observatory somewhat resembles that just described, and indicates a shock of about the same intensity. Several loops extend about 20 millimeters from the center.

The shock lasted from five to twelve seconds, according to some persons, while others considered that the earth shook for fully a minute;

motion great but gentle; two persons felt nausea; four regulators in jewelers' shops, on walls running west-northwest and east-southeast, stopped at about 3:10, two of them indicating 3:10:30 and 3:10:35 respectively. A clock with heavy mercurial pendulum on same wall was not stopped.—F. G. Blinn. Intensity=(VI).—William Ireland.

Three miles from Collinsville, in the region of greatest disturbance, houses rocked and pieces of plaster fell (VII); articles shaken from mantel-pieces, etc.; chickens shaken from their perches; dogs barked; two chimneys demolished, and one had the upper part twisted 45 degrees; goods thrown from shelves in stores.—F. E. Booth, manager of Black Diamond Canning Company, in letter to F. G. Blinn.

Mill's College.—In the seismograph record at this place there are great loops 80 millimeters long, which appear to have been produced by the swinging of the pendulum after the shock. It is necessary to give the seismograph pendulums some stability, but they are adjusted to swing in a long period, much longer than that of the ordinary earthquake shock. It is evident, however, that in an earthquake like this the vibrations might be nearly synchronous with those of the pendulum, which would thus be thrown into violent oscillations. In most earthquakes this is not likely to happen. Possibly the long loops in some of the other seismograph records may be due to the same cause.

San Francisco.—No damage was done in the city. The newspaper accounts seem to be exaggerated. Motion from west-northwest to east-southeast.—J. B. Trembley.

Time of shock in San Francisco, 3:10:42.—Prof. Davidson.

Fort Point Light-Station.—The shock was preceded and accompanied by a rumbling noise and lasted eight or nine seconds. The keeper felt three shocks, the first short and light, and about fifteen seconds later one more distinct; a minute afterwards, the last, which was a tremor. Doors were opened; windows and crockery rattled and people were aroused from sleep.

Lime Point Fog-Signal Station.—Time, 3:10:32, corrected the previous day by time-bell on Telegraph Hill, San Francisco. Lasted about five seconds, and was accompanied with a noise like the rumbling of distant thunder. An undulatory movement that appeared vertical.

Forest Hill.—In the Mayflower mine no sign of an earthquake at 600 or 800 feet underground. Directly over the mine the shock was strong enough to rattle a wash-bowl against a pitcher.—S. E. Reamer, San Francisco.

San José, University of the Pacific.—Prof. Higbie sends a record which shows about the same amount of motion as at Oakland, the greatest oscillations being northeast and southwest.

San Francisco.—Various reports from the San Francisco papers are given below, the date, May 19:

> At 3:12 a. m. Sunday morning a severe shock of earthquake was experienced here. It lasted twenty seconds and was followed by peculiar shivers continuing five sec-

onds longer. The motion was from east to west, and the shock is said to have been the sharpest experienced here for the past fifteen years. Half of the door-bells in the city were set ringing, and glassware and mirrors damaged. A slight shock was also experienced about eighteen minutes past 10 o'clock on Friday night. The motion was also from east to west.

Stockton.—A heavy shock of earthquake was felt here at 3:15 this morning. It lasted about ten seconds, with vibrations from north to south. A large number of people hurried into the streets. One man jumped out of a second-story window. A number of buildings were heard to crack, but no damage has been reported.

Lodi.—The heaviest earthquake that has been felt here for twenty years occurred at 3:15 this morning. The wave was north and south, and so severe that goods were shaken from shelves in one of the stores here, and dishes rattled in the houses.

Antioch.—The most severe earthquake shock experienced since the famous one of 1868 visited this place about 3:10 this morning. It shook off the tops of many chimneys in the town. The vibrations were from north to south. The entire population was aroused and many people in their night-gowns rushed into the streets, thinking their houses were coming down. No serious damage is reported, but the harvest of broken crockery and glassware, cracked plaster ceilings and chimneys, is abundant.

Modesto.—The people of this section were awakened by a heavy shock of earthquake at 3:15 this morning. The vibration was from north to south and lasted several seconds. The windows and doors rattled and chandeliers vibrated. A second shock, less pronounced, followed ten minutes later. No damage is reported.

Napa.—The severest earthquake experienced here in twenty years occurred at 3:10 this morning. It lasted twelve seconds. No damage is reported beyond the cracking of plaster. The vibrations were from west to east.

San Leandro.—The heaviest shock of earthquake felt here for years was experienced at 3:11 this morning. The vibrations were from north to south and lasted about one minute.

Petaluma.—This morning at 3:15 there were three distinct shocks of earthquake. They followed each other in quick succession, the vibrations being from east to west. The second shock was exceedingly heavy.

Rio Vista.—This community was startled at 3:15 a. m. by the most severe shock of earthquake since 1868, the duration of the shock being several seconds. People jumped from their beds, chickens were thrown from their roosts, and some chimneys were slightly damaged. The direction was from west to east.

Newark.—The most startling earthquake experienced for many years was felt here this morning at 3:05. There appeared to be three shocks, vibrating from east to west.

Nevada City.—Three distinct and rather heavy shocks of earthquake were felt here this morning at 3:30. Their direction was from west to east

Calistoga.—An earthquake occurred at 3:03 this morning. It was not remarkably heavy, but the vibrations, which were from east to west, continued longer than those of any earthquake felt in many years.

Vacaville.—The earthquake shock this morning at 3:10 lasted fully half a minute. It was the most severe shock ever experienced here. The vibrations were from northeast to southwest.

Santa Cruz.—Quite a sharp shock of earthquake was felt here at 3:20 this morning, vibrating from west to east.

Sacramento.—An earthquake shock was felt here at 3:10 this morning. The wave came from the southeast and was quite severe. No damage was done.

Mountain View.—A heavy shock of earthquake, with vibrations north and south, was felt here at 3:10 this morning. No damage was done.

San José.—The earthquake passed through here at 3:12 to 3:14 a. m., the wave seeming to pass from southeast to northwest. There was but one distinct wave, followed by a rumbling and a backward motion, due to the reaction.

Pleasanton.—At 3:15 this morning there was felt here the worst earthquake shock since 1868. The vibrations were north and south, and continued for fifteen seconds. They were so severe that buildings creaked and tottered.

Haywards.—A severe shock of earthquake startled the people of this town and valley this morning about fifteen minutes past 3 o'clock. It was strong enough to throw many out of bed, and lasted several seconds.

Los Gatos.—Three sharp earthquake shocks were felt here at 3 o'clock this morning. The first was much more severe than the two succeeding ones. The vibrations were north and south.

Fairfield.—Three heavy shocks of earthquake in quick succession were felt here at 10 minutes past 3 o'clock this morning, vibrating east and west. They were the heaviest since 1868.

Woodland.—There was quite a heavy earthquake felt here this morning at 15 minutes past 3 o'clock. The vibrations were from east to west, and the duration about fifteen seconds.

Santa Rosa.—Three distinct shocks of earthquake in close succession were felt at 3 o'clock this morning. The vibrations were from east to west.

Ione.—Many citizens were aroused at 3:10 this morning by an earthquake shock, lasting several seconds. The vibrations were north and south.

Suisun.—At 3:10 this morning a severe shock of earthquake was felt here, accompanied by a rumbling noise.

May 26, 7:13 a. m. Central California.—Lick Observatory. A very slight shock was recorded by the seismographs at 7:12 ± 1. The extreme motion of the earth's surface did not exceed 0.5^{mm}. The greatest disturbance was in a north and south direction, and the vertical component was very small. Although this shock was recorded on both instruments, it was not felt by any one on the mountain.

(II) Period = two seconds, hence computed intensity = 2.5 or (I).

San José and vicinity.—Not felt. San José Times.

San Francisco.—A slight shock of earthquake was felt in this city on Sunday morning at thirteen minutes six seconds after 7. The vibrations lasted but two or three seconds and were east and west. (Time noted by Professor Davidson).

Gonzales.—A heavy shock of earthquake was felt here this morning at 7:15. The tremor lasted half a minute and made the large buildings quiver. The oscillation was from northeast to southwest.

Santa Cruz.—Quite a shock of earthquake occurred at 7:15 this morning, the wave being west to east. No damage was done, the shock being much lighter than the one a week ago.

June 2, 5:54 p. m. Humboldt Light and Fog-Signal Station.—Was sitting at desk down-stairs; house on sand. It lasted about seven seconds. No previous noises; but with the quake came a noise of rushing wind or sudden gust. I would class the quake as light. It rattled crockery, but did not throw anything off shelves. It indicated itself in an undulatory motion from west-southwest to east-northeast as marked by a wicker basket suspended from the ceiling which swung 15 degrees. The pendulum clock in Light tower (pendulum 20 inches long) stopped at 5:54 p. m. sun time by almanac; the clock faces to west. Weather at the time: Little light wind all around compass, with heavy overcast sky for preceding forty-eight hours. My house being close to the bay, I ran to the water's edge to observe if there was any disturbance in the water but could not see that the quake made any, for the ripple at the edge remained still.—William C. Price, Light-keeper.

June 6, 4 a. m. Oakland.—A sudden shock lasting one second, followed by a rumbling noise lasting five or six seconds (II).—F. G. Blinn. A slight trace was made by the seismograph. Mount Hamilton, not felt or recorded.

June 6, 8:30 p. m. San Bernardino.—Noticed by some persons, but not by all. A single shock from northeast to southwest, with some vertical motion. A few persons report rumbling noises. Times of occurrence vary somewhat; 8:14 given by one person. Estimated intensity (III).—W. C. Parmley.

There was quite a shock of earthquake in this city last evening at about 8:30. The shock was accompanied by a low rumbling, and the vibrations were northeast to southwest.—San Bernardino, California, Daily Times-Index, June 7.

June 9, 3:44:24 ± 3 p. m. Mount Hamilton.—Very slight shock (I) noticed by J. E. K., not by others. Vibrations lasted a few seconds. A small record was made on the duplex seismograph.

June 10, 7:33:7 a. m. Mount Hamilton.—Very slight shock recorded on both seismographs, but not felt by anybody (II). Measurement of the record on the Ewing seismograph gave the following data: Duration = twenty-four seconds; maximum double amplitude (magnified) east and west = 0.52 millimeters; maximum double amplitude (magnified) north and south = 0.38 millimeters; maximum double amplitude (magnified) vertical = very small; period of complete vibration = about one-half second. Hence computed intensity is 12 or (I) of Rossi-Forel scale.

June 19, 10 p. m. Lassen County, California, and Nevada.—This shock, which does not appear to have been felt in the central and southern parts of California, is thus described in the Susanville Advocate:

> Since the 19th instant the people of Susanville, Lassen County, have felt about seventy-five slight shocks of earthquake. The first shock occurred at 10 o'clock on the night of the 19th, and was the heaviest ever experienced in this section. The first great shock was followed at greater or less intervals by more or less heavy shocks for over two hours, until twenty-eight shocks had been recorded, of which the first, the thirteenth, the fifteenth, and the eighteenth were very severe. At the first shock, which was something fearful, rocking buildings from side to side and scattering crockery and glassware in all directions, people rushed out of houses with the costume, principally, that nature had provided for them. The vibrations were from south to north, but apparently did not extend much north of Susanville. The shocks were generally preceded by distinct rumbling noises.

Chico.—A slight earthquake shock was experienced here last evening about 10 o'clock. Vibrations from east to west.

Sacramento.—At 10:12 last night a slight shock of earthquake was felt here. It lasted but a few seconds, and was felt by only a few persons.

Susanville.—The heaviest earthquake ever felt here occurred at 10:05 last night, succeeded by lighter shocks at short intervals during the entire night.

Downieville.—There was an earthquake last night at 10:07 lasting about a minute. The weather is warm. The mercury this afternoon marked 90 degrees.

Grass Valley.—An earthquake was felt here at 10 o'clock last night. The shock was quite heavy.

The following is part of a letter to the San Francisco Call:

> The series of earthquake shocks that commenced here on the evening of the 19th inst. have been continued at intervals up to the present. Although the first shock was by far the hardest, there have been a number since that have made things quite lively, and indicating that the force that creates these commotions is active still. Reports from different localities within a few miles of here point to the fact that this place, Willow Creek, and Eagle Lake appear to be the centers of the disturbances, the surrounding country being less disturbed. The section named above could be included in a circle twenty-five miles in diameter. Since the first shock some curious phenomena have been developed. The spring from which the town of Susanville is supplied with water has been largely increased in its volume of water, as also many others in this vicinity. The waters are of a milky whiteness. The water of Eagle Lake has been greatly disturbed and is quite muddy. At the south of Eagle Lake and extending many miles is a range of high volcanic hills, covered generally with timber and chaparral. A number of persons who were near or on these hills last Friday heard loud rumblings to the west, accompanied by loud detonations like the firing of very heavy artillery, while the earth seemed to keep up an almost uninterrupted trembling motion. A slight trembling is also noticed much of the time here in town. A farmer, who lives in Willow Creek Valley and who was at work in a large irrigating ditch at the time of one of the recent shocks, had the water thrown out of his ditch, so violent were the oscillations of the earth. A chimney in the house of S. Knudson, in Willow Creek, was thrown down by the first shock. The weather continues quite warm.

San Francisco.—News from Susanville in the Sierra Nevadas says slight earthquake shocks continue, and that the people have become so accustomed to the constant trembling of the earth that they pay no attention to it.—Dispatch to San Francisco papers.

Carson City, Nevada.—Prof. C. W. Friend sends a seismograph record which shows a maximum motion of 5 millimeters (magnified four times about equally distributed in all azimuths.

June 20. Susanville.—A continuation of the earthquake shocks. "There were earthquake shocks at intervals the entire day after the first heavy shock during the night. The upper heavens were filled with small meteors."—San Francisco Chronicle, June 22.

June 20, p. m. University of the Pacific, San José.—The seismograph record shows vibrations of about 3 millimeters in an east and west direction and 1.5 millimeters in a north and south direction (both magnified).

June 24, about 4 a. m. University of the Pacific, San José.—The record sent by Prof. Higbie indicates a shock of about the same intensity as the preceding one, and with vibrations in about the same direction.

June 25, 3 a. m. San Diego.—"Dr. Eigenmann reports an earthquake at San Diego at 3 a. m., June 25." West American Scientist, August.

Carson City, Nevada.—A seismograph record, marked "during night, June 25–26," is sent by Prof. Friend. The vibrations are west-northwest and east-southeast, and indicate a shock of intensity (III).

June 27–28, during night. Carson City, Nevada.—A slight shock recorded, with vibrations in same direction as the preceding one.

June 30, between 8 and 10 a. m.—Carson City, Nevada.—(II) or (III). C. W. Friend.

July 2–3, during night. Carson City, Nevada.—Slight shock recorded (II?).

July 4, 8:05 a. m. Carson City, Nevada.—Slight shock recorded. About the same as the preceding.

July 4–5, during night. Carson City, Nevada.—Record larger than the last, but pen did not return to starting point. Magnified motion perhaps 3 millimeters.

July 6–7, during night. Carson City, Nevada.—Record shows (magnified) motion of 4 millimeters in direction west-northwest and east-southeast.

July 9–10, during night. Carson City, Nevada.—Light shock. In all these records the principal motion is west-northwest and east-southeast.

July 10, and preceding days. Arroyo Grande, San Luis Obispo County.—The following report is from the San José Times:

> The territory around Los Olivos has been troubled with an earthquake the past few days. Sunday there were six distinct shocks, one of which rattled the dishes off the shelves. The hardest shock took place at 3 o'clock this morning. The druggist at Santa Ynez has removed his bottles from the shelves to the floor. Four years ago a burning volcano was reported at Lookout Mountain, on the south side of Santa Maria valley, which was decided to be a burning asphalt bed.

July 25, 10:8 p. m. Mount Hamilton.—Sharp shock. Rattled pictures on the wall. Time, 10:8:2 (V).—E. S. H. A light, quivering shock, followed by a severe shock, shaking the observatory building, at 10:7:59.—E. E. B. Time, 10:7:59.—J. M. S. Time, 10:7:58.—C. B. Hill. Generally felt by those on the mountain who were awake and not engaged in some occupation which would disturb the attention. It did not seem to me as strong as others we have had (IV).—J. E. K.

Record obtained on both seismographs. The Ewing machine shows maximum (magnified) double amplitude = one millimeter in north and south direction, with period = one-third second. Corresponding east and west motion very small, and vertical component hardly perceptible. The vibrations are almost indistinguishable at fifteen seconds after the time of starting of the plate. The duplex pendulum record agrees well with this, but shows a slightly greater amplitude (magnified four times, about 2 millimeters). The computed intensity is 53 or R–F. (II–III).

July 31, 4:46:45 a. m. Central California. Mount Hamilton.—Shock wakened sleepers. Time 4:46:45 a. m. (V).—E. S. H. Awakened from sleep. Time, as nearly as could be ascertained, 4:46:50 a. m.—J. E. K.

Measurement of the record made by the Ewing seismograph gives the following data:

Extreme duration, 30 seconds.

Greatest motion, north and south (double amplitude), 1.3 millimeters (magnified).

Motion east and west, a little less.

Vertical motion very small.

Period of wave = about 0.3 second.

Computed intensity = 88 = (IV +).

The duplex pendulum seismograph gave a record in close agreement with the above.

Mare Island Light Station.—Time 4:48, navy-yard time.—Was awakened from a sound sleep and took my watch and marked the time before the trembling subsided. There was a rattling of bowls and pitchers. I felt two shocks: that is, one that was continuous and a sudden heavier impetus in the midst of the general shaking. It was sharp, severe, and quick, and more vertical than that of May 19, Kate C. McDougal, light-keeper.

Santa Cruz Light Station. Time, 4:45, standard time.—There seemed one tremulous shock lasting about three seconds.—Laura J. F. Hecox, light-keeper.

Fort Point Light Station. Time, 4:47.—There was one shock lasting about twelve seconds, an undulating movement from east to west, unaccompanied by noise. The clock in the tower almost stopped but recovered itself. It faces south-southeast.

Oakland.—The shock appears to have been very much more severe than at the Lick Observatory. The magnified record at the Chabot Observatory shows irregular vibrations distributed in all azimuths over a circle about 8 millimeters in diameter, with irregular loops running out about 18 millimeters from the center. These may be due to swinging of the pendulum. Time, 4:45:30. Duration, twenty seconds. The pier of the 8-inch equatorial telescope was cracked near the top, where it was 40 by 15 inches in cross-section, and the south side was shifted one-sixteenth inch toward the east, the north side remaining in position. The pier is of brick. The ferry clock at the foot of Market street, San Francisco, stopped at 4:47:20. (Error ± 3 seconds) The clock in the ferry-house at Oakland pier stopped 4:46:30; error unknown.—C. Burckhalter.

East Oakland.—At Mr. Blinn's observatory the record showed an indistinguishable mass of lines about 4 millineters in diameter, with many loops roughly distributed over a circle about 18 millimeters in diameter, and finally a number of great loops extending as much as 35 millimeters from the center. The last are certainly due to swinging of the pendulum. They extended mostly in an east and west direction.

Fully (VI). F. G. B. Time about 4:47. A fresh plate was subsituted immediately after the heavy shock, but the two subsequent lighter shocks made no record, and I did not feel them. They are described as being vertical and momentary.—F. G. Blinn.

The first shock awakened me at 4:46:34, which must have been very nearly the time of beginning of the earthquake. Time of ending noted by Mr. A. S. Ireland at 4:46:45. The second shock occurred at 4:54:59, and was quite slight, lasting only about three seconds. The correction of my watch was determined by transit observations by Mr. Blinn, shortly after the shocks occurred.—Wm. Ireland.

Oakland.—The first shock seemed to be from northeast to southwest, and was attended by three distinct, loud, sharp reports, followed by a rattling noise which gradually died away in the distance. No vibration of pendant objects, but rattling of windows for a longer time than I had ever before noticed.—J. B. Trembley.

Berkeley.—At the University observatory a diagram was obtained showing the effect of both shocks. The greatest oscillations are in an east and west direction. (About 13 millimeters, magnified, but the pen did not return to the starting point, stopping about midway on the diagram. The greatest motion is perhaps 6 millimeters.) Time, 4:47 a. m.—Prof. Soulé.

San Francisco.—Time, 4:46:38.—Prof. Davidson.

Carson City, Nevada.—The earthquake of July 31 was not felt here. The seismograph did not show a trace.—C. W. Friend.

Reports sent to the San Francisco papers follow, all dated July 31:

San José.—There was a heavy shock of earthquake at 4:45 this morning, the heaviest in seven years. No damage was done, and there was no excitement. The oscillations appeared to be north and south.

Oakland.—The earthquake was quite severely felt in Oakland yesterday morning. The shock was very sharp, but little damage was done.

At the students' observatory at Berkeley the shock was registered as occurring at 4:47 o'clock in the morning and lasting fifteen seconds. The vibration was from north of west to south of east. It was followed by three slight ones at short intervals. Prof. Frank Soulé says that this was the most severe earthquake that he has experienced since he came to California, in 1869. He classes it as sixth in the Rossi-Forel scale—that is, one that throws down chimneys and small articles.

Sacramento.—There was no earthquake here this morning.

Napa.—An earthquake shock was felt here at 4:45 this morning. It was preceded by tremors which continued about six seconds, and the shock which followed was quite heavy, lasting four seconds. The vibrations were north and south. No damage was done.

Petaluma.—Two heavy shocks of earthquake visited us this morning at 4:45 o'clock. The vibrations were from east to west. The weather is warm and sultry.

Martinez.—There was a severe shock of earthquake here at 4:50 o'clock this morning, lasting several seconds. No damage done as far as heard from.

Gilroy.—There was a slight shock of earthquake here at 5 o'clock this morning.

Santa Cruz.—An earthquake was felt here at 4:50 o'clock this morning, lasting several seconds. The vibrations were west to east.

Centerville.—Two heavy shocks of earthquake occurred here this morning at 4:47 o'clock of about twenty-five seconds' duration. The vibrations were east and west. No damage has been reported as yet.

Los Gatos.—A severe earthquake shock was felt this morning at 4:50 o'clock. The wave was east to west. Houses creaked, glass rattled, and many were awakened out of a sound sleep. Considerable alarm was felt.

Santa Rosa.—A sharp earthquake was felt here at 5 o'clock this morning, lasting about five seconds. The vibrations were southeast to northwest.

Benicia.—The extremely warm weather of the past three days was succeeded by three distinct shocks of earthquake at 4:50 o'clock this morning. The first shock was quite strong and lasted several seconds, and was followed by two lighter ones. The vibrations seemed to be north and south.

Newark.—A severe shock of earthquake was felt here this morning at 4:45 o'clock. The vibrations were from north to south and the duration was about ten seconds.

Concord.—At 4:40 o'clock this morning a sharp shock of earthquake was felt, succeeded by a tremble that lasted fully two minutes. The direction of the shock was southeast to northwest; duration, thirty seconds. At about 3 a. m. a light shock was felt. In the night also another.

San Leandro.—The heaviest shock of earthquake since the one of October, 1868, occurred at 4:46 o'clock this morning. A low rumbling sound preceded the first and heaviest shock, which lasted about one and a quarter minutes. The first half minute the oscillations were light and easy. Then for a quarter of a minute they were heavy, after which they gradually became less and less. Ten minutes after the first shock another slight shock was felt, and six minutes later another. The oscillations were from north to south. The damage includes one chimney thrown down and some crockery broken.

6:19:39 p. m. **Oakland.**—Slight shock (I) momentary.—F. G. Blinn.

August 7, 3:43:11 p. m. **Mount Hamilton.**—Very slight shock suspected by E. S. H. (I?).

August 13, 4:43 a. m. **Oakland.**—Sufficient to awaken a few sleepers (III, IV?). Appears to have been very local in character, and confined to Alameda and Central, and West Oakland, as it was not felt in San Francisco or East Oakland.

August 23, 2:32:46 p. m. **Mount Hamilton.**—Very slight shock. Felt by some persons and not by others in the same room; time, 2:32:46, E. S. H. Time, 2:32:48—J. M. S. Ewing machine not started. Very small record on the duplex pendulum seismograph (I).

August 27, 6:15 p. m. **Southern California.**—Not felt at Mount Hamilton. The following are dispatches to the San Francisco papers:

Pomona.—This evening at 6:15 the most severe earthquake shock that has been felt in this locality for fifteen years was observed. There were two distinct shocks, accompanied by a peculiar noise that sounded as though houses and buildings were falling. The shocks were about a second apart. Several people were thrown to the floor and nearly every one ran out of doors in a moment. Dishes were rattled from shelves, and in the stores goods were thrown down on the floor. Many windows were cracked and broken and buildings shook, but no damage was done to them. At the Pomona Progress office the type was pied, and at the Hotel Palomares glassware and crockery was broken.

Los Angeles.—A sharp shock of earthquake occurred here at 6:13 this evening. It began with a light tremor, which lasted a few seconds. Then the vibrations grew stronger and ended with two heavy shakes. The entire duration of the disturbance was about ten seconds. Clocks stopped and ceilings cracked. Much alarm prevailed for a time and many people ran into the streets. So far as now known no damage was done, but the quake was the most severe experienced here in many years.

Santa Ana.—Two very marked shocks of earthquake occurred here this afternoon at 6:12. The vibrations were from southwest to northeast and followed each other in quick succession. Crockery rattled, chandeliers and swinging signs vibrated, and people in the second and third stories of buildings were considerably frightened in some cases. The quaking continued for seven seconds, but no damage whatever resulted.

Santa Monica.—There was an earthquake here at 6:16 p. m., lasting eight seconds. It was very noticeable in all buildings, but not strong enough to do any damage. The vibrations were from north to south. It was the first known here for many years.

Pasadena.—A very perceptible earthquake shock was observed in this city at 6:20 p. m., lasting from five to six seconds. Dishes on the dinner-tables were shaken and some were broken.

San Bernardino.—"Quite a distinct shock of earthquake was felt in this city last evening at about 6:15. The vibrations lasted several seconds and were from east to west."—San Bernardino Times-Index, August 28.

A light shock (III). Time noted by George Jordan, jeweler, at 2:12:20 p. m. Clock one minute fifteen seconds slow by Signal Office signals, hence Pacific Slope time = 6:13:35. A slight rumbling noise before the shock is generally reported. The shock is described as a single impulse, lasting but one or two seconds, but reports disagree as to direction of the vibration.—W. C. Parmley.

September 24, 8 a. m.—Reported in San Francisco papers:

Napa.—There was a slight earthquake at 8 o'clock this morning.

Winters.—There was a slight shock of earthquake here this morning just before 9 o'clock. The direction of the shock was from west to east.

Woodland.—Quite a heavy earthquake was felt here to-day at 8 o'clock this morning. There were two distinct vibrations and they were from north to south.

September 29, 8:10 p. m. Wawona.—There were heavy shocks of earthquake at 8:10 Sunday night and at Yosemite followed by two lighter ones. The vibrations were east and west and lasting twenty-two seconds. Other light shocks were reported at Yosemite. A special dispatch from J. H. Lawrence, at the Big Tree Grove, says there was a severe shock of earthquake at 9:30 Sunday evening, continuing about twenty seconds. The vibration was distinctly east and west, accompanied by a rumbling noise resembling a heavy train of cars crossing a bridge, followed by two lighter shocks. Hollow logs and trees oscillated.

Rancho Laguna de Tache, Kingsburg.—A slight shock in section 29, T. 17 S., R. 21 E., at 9:20 p. m.—S. C. Lillis.

September 30, 12:17:30 p. m.—Kingsburg, same place as above. A slight shock.—S. C. Lillis.

October 24, 7:20 a. m. East Oakland.—Tracing obtained with seismograph shows (magnified) vibrations of about 1.6 millimeters. The pen did not return to the starting point. Light shock (II) noticed by several persons. Time noted by Mr. Ireland at 7:19:45 (wrongly given in the Oakland papers as 7:15). Felt by one or two persons in Oakland and Alameda.—F. G. Blinn.

November 14, 6:54 p. m. San Lorenzo.—The telegraph operator reports an earthquake at above time. East Oakland. The seismograph record shows a (magnified) motion of 1 millimeter. The shock was not felt here by anybody.—F. G. Blinn.

November 15, 7:55 p. m.—East Oakland.—A slight shock (II) felt by three persons in the vicinity. No record on seismograph, hence motion was probably vertical. The shock was felt in San Francisco, and noticed in the daily papers.—F. G. Blinn.

Healdsburg.—"A very severe shock of earthquake was felt in this city last night at 7:55. It was the heaviest experienced here in many years."—Dispatch to San Francisco papers.

December 2, 6:30 p. m.—East Oakland.—The seismograph record (magnified) shows a number of nearly circular tracings about two millimeters in diameter, inclosing short irregular lines in different azimuths. The time was noted by a neighbor, as I was not at home when the shock occurred.—F. G. Blinn.

The present bulletin is to be regarded as little more than a list of reported earthquakes in California in 1889 and a collection of such data as are available for estimating the intensities of the different shocks. Accurate observations of earthquakes are difficult to obtain, as the instruments employed require some skill in the observer and a certain amount of attention to be always in working condition. The sensations experienced during an earthquake shock vary greatly for different persons, and descriptions based on the feelings alone are apt to be extremely unreliable. It is hoped, however, that other stations provided with suitable instruments can be established in different parts of the State, and that eventually sufficient data can be accumulated for a more complete study of earthquake phenomena on the Pacific coast than the material now available would permit.

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[Bulletin No. 69.]

The publications of the United States Geological Survey are issued in accordance with the statute approved March 3, 1879, which declares that—

"The publications of the Geological Survey shall consist of the annual report of operations, geological and economic maps illustrating the resources and classification of the lands, and reports upon general and economic geology and paleontology. The annual report of operations of the Geological Survey shall accompany the annual report of the Secretary of the Interior. All special memoirs and reports of said Survey shall be issued in uniform quarto series if deemed necessary by the Director, but otherwise in ordinary octavos. Three thousand copies of each shall be published for scientific exchanges and for sale at the price of publication; and all literary and cartographic materials received in exchange shall be the property of the United States and form a part of the library of the organization: And the money resulting from the sale of such publications shall be covered into the Treasury of the United States."

On July 7, 1882, the following joint resolution, referring to all Government publications, was passed by Congress:

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STATISTICAL PAPERS.

Mineral Resources of the United States, 1882, by Albert Williams, jr. 1883. 8°. xvii, 813 pp. Price 50 cents.

Mineral Resources of the United States, 1883 and 1884, by Albert Williams, jr. 1885. 8°. xiv, 1016 pp. Price 60 cents.

Mineral Resources of the United States, 1885. Division of Mining Statistics and Technology. 1886. 8°. vii, 576 pp. Price 40 cents.

Mineral Resources of the United States, 1886, by David T. Day. 1887. 8°. viii, 813 pp. Price 50 cents.

Mineral Resources of the United States, 1887, by David T. Day. 1888. 8°. vii, 832 pp. Price 50 cents.

Mineral Resources of the United States, 1888, by David T. Day. 1890. 8°. vii, 652 pp. Price 50 cents.

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TO THE DIRECTOR OF THE
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J. W. POWELL, DIRECTOR

A
CLASSED AND ANNOTATED
BIBLIOGRAPHY OF FOSSIL INSECTS

BY

SAMUEL HUBBARD SCUDDER

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PREFACE.

The present work is an extension to date of a bibliography published in 1882. It has, however, been altered in a few details, and, besides being fuller, differs from that in being a classed list, the works and essays which cover the entire field (which embraces not only insects proper, but also myriapods and arachnids) being placed first, followed by the more special memoirs grouped first by times, next by classes, orders, etc., the classification employed in my Systematic Review of Fossil Insects, being used as a convenient basis. This will also form the basis of the Index to Known Fossil Insects, forming a later complementary bulletin. The occasion for the publication of both of these at this time is the completion of the first extended account of the American Tertiary insects given in Vol. XIII of the Hayden series of geological reports, by which the numbers of the European and American insects bear for the first time some sort of proper relation to each other, at least in the lower groups. This makes an immediate "account of stock," to employ a commercial term, desirable.

The points wherein the present biliography differs from its predecessor, besides its classification and its inclusion of later material, are the somewhat fuller and otherwise altered notes, and the discontinuance of references to later treatises on the relations which Limulus and its allies bear to the arachnids. For the same reasons as before, viz, that the study of the Merostomata is ordinarily confined to a different group of paleontologists from those who are engaged on fossil insects, and because it would unduly, and, in my opinion, unwisely, extend the scope and special purpose of this bibliography, no attention is given to this side of the subject beyond the earlier and largely controversial papers; though it is not intended that this action shall be in any sense an expression of opinion, for this, not having specially studied the subjects, I am not prepared to give.

I have thought it best to retain the works upon amber given in the earlier bibliography, even when they make only the broadest allusion to insect inclusa, since the fossil insects of the European amber form such a predominating element in the tertiaries of the Old World, and I have even added a few later entries. Perhaps not one-half the works or papers concerning amber referred to in bibliographies are procurable in this country, and of those seen comparatively few contain references to insect inclosures. The scattered allusions to amber insects, taken from older authors and published later than the seventeenth century, have in general been left unnoticed as wholly valueless and uninteresting; but all others, where possible, have been introduced into the list in a more or less perfect form. The best notice of the early literature of amber will be found in Boehmer's Bibl. Script. Hist. Nat., 4, i, 468–477. 8°. Lipsiæ. 1788.

The Index of Authors at the end contains over five hundred names.

BIBLIOGRAPHY OF FOSSIL INSECTS.

I.—GENERAL AND MISCELLANEOUS.

Agassiz, Jean Louis Rodolphe. The primitive diversity and number of animals in geological times. 8°. [New Haven.] 1854. pp. 16. (Am. journ. sci., (2), 17: 309–324.) 8°. New Haven. 1854.

Devotes a paragraph on p. 8 (316) to insects, and prophesies their discovery anterior to the Carboniferous period.

——— See also **Buckland**, W.

Aldrovandus, Ulysses. De animalibvs insectis libri septem cvm singvlorvm iconibvs ad vinum expressis. f°. Bononiæ. 1638. t. p., pp. (8), 767, (44).

The section, p. 700, De vermibus in lapidibus, & metallis nascentibus cap. 8, contains nothing original.

Allen, Grant. The colour sense; its origin and development. An essay in comparative psychology. 8°. London. 1879. pp. 12, 282.

In a chapter (4) on "insects and flowers," he discusses briefly the antiquity of insects and their relation to the earliest entomophilous flowers. See especially pp. 38, 42–46, 66–69, 78–80. See also **Wallace, A. R.**

André, Édouard. See **Brongniart**, C. J. E.

Assmann, August. Palaeontologie. Beiträge zur insekten-fauna der vorwelt. —Einleitung. I. Beitrag. Die fossilen insekten des tertiären (miocenen) thonlagers von Schossnitz bei Kanth in Schlesien. II. Beitrag. Fossile insekten aus der tertiären (oligocenen) braunkohle von Naumburg am Bober. Mit einer tafel abbildungen. 8°. Breslau. 1869. pp. 1–62, taf. 1. (Zeitschr. f. entom. des vereins f. schles. insektenk., (2) 1.)

The introduction, of thirty pages, gives a general review of fossil insects. I have seen only the separate edition. See same title in Section VI, and Section VI*f*.

Barrois, Charles. See **Scudder**, S. H.

Blanford, W. T. See **Medlicott**, H. B., and **Blanford**, W. T.

Brauer, Friedrich. See **Fritsch**, A.

Brodie, Peter Bellinger. Contributions to the geology of Gloucestershire, intended chiefly for the use of students. (Geologist, [1]: 41–48, 81–88, 227–233, 289–291, 369–377.) 8°. London. 1858.

Insects are referred to on pp. 47, 231, and 375, mostly from the lias.

——— The distribution and correlation of fossil insects, and the supposed occurrence of Lepidoptera and Arachnidæ in British and foreign strata, chiefly in the secondary rocks, . . . being a paper read at the annual meeting of the Warwickshire natural history and archæological society, held at the museum, Warwick, April 18, 1873. 8°. Warwick. [n. d.] pp. 19. (Ann. rep. Warw. nat. hist. arch. soc. 37 :12–28.) 8°. Warwick. 1873.

A very general account of fossil insects, followed (pp. 12–19) by a Tabular view of British and foreign fossil insects chiefly in the secondary rocks, omitting the foreign tertiaries. Only separate paper seen.

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An enlargement of the last, principally in the tabular view. Like the preceding, it is much disfigured by typographical errors.

Brodie, P. B.—Continued.

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B. (pp. 565–632) refers to the geological distribution of insects.

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Brückmann, Franciscus Ernestus. De fabulosissimæ originis lapide, arachneolitho dicto, epistola ad virum clarissimum... Albertum Rittervm. 4°. Wolfenbüttelae. 1722. pp. 16, pl. I.

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The same. 2 vols. 8°. Philadelphia. 1837. Vol. 1, pp. 443;—vol. 2, pp. 131, pl. as in above.

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Buckman, James. See **Murchison,** R. I.

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Burmeister, Hermann. Geschichte der schöpfung. Eine darstellung des entwicklungsganges der erde und ihre bewohner. 8°. Leipzig. 1843. pp. 6, 487.

Refers to insects on pp. 430, 445–46. The five subsequent editions not examined.

Cope, Edward Drinker. On the evolution of the vertebrata, progressive and retrogressive. (Amer. nat., 19: 140–148, 234–247, 341–353.) 8°. Philadelphia. 1885.

A note on p. 142 discusses the ancestral line of the arthropods.

Cronstedt, Axel Fredric. An essay towards a system of mineralogy. Translated from the original Swedish with notes by Gustav von Engestrom. To which is added a Treatise on the pocket laboratory, containing an easy method, used by the author, for trying mineral bodies, written by the translator. The whole revised and corrected, with some additional notes by Samuel Mendes Da Costa. 16°. London. 1780. t. p., pp. 36, 329.

Refers, p. 264, to fossil insects found in the alum slate at Andrarum in Skåne; I also find p. 257 of the "old ed." referred to, but have been able to examine neither it nor the original Swedish.

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Cope, Edward Drinker. On the evolution of the vertebrata, progressive and retrogressive. (Amer. nat., 19: 140–148, 234–247, 341–353.) 8°. Philadelphia. 1885.

A note on p. 142 discusses the ancestral line of the arthropods.

Cronstedt, Axel Fredric. An essay towards a system of mineralogy. Translated from the original Swedish with notes by Gustav von Engestrom. To which is added a Treatise on the pocket laboratory, containing an easy method, used by the author, for trying mineral bodies, written by the translator. The whole revised and corrected, with some additional notes by Samuel Mendes Da Costa. 16°. London. 1780. t. p., pp. 36, 329.

Refers, p. 264, to fossil insects found in the alum slate at Andrarum in Skåne; I also find p. 257 of the "old ed." referred to, but have been able to examine neither it nor the original Swedish.

Czech, Carl. Ueber die entwickelung des insectentypus in den geologischen perioden. (Programme realschule Düsseldorf, 1858, 1–14.) 16°. Düsseldorf. 1858.

Mainly devoted to showing that the insects of the carboniferous period were not less completely developed than the existing forms.

Da Costa, Samuel Mendes. See **Cronstedt**, A. F.

Dallas, William S. See **Müller**, F.

Dana, James Dwight. Manual of geology; treating of the principles of the science with special reference to American geological history. Illustrated by over eleven hundred and fifty figures in the text, twelve plates, and a chart of the world. Third edition. 8°. New York. 1880. pp. 14, 912, (4), pl. 12, map.

Insects mentioned on pp. 273, 274, 334–336, 342, 343, 350, 351, 388, 411, 416; many figures of American, especially paleozoic, species given. The first edition (1862) gave much less space to insects; the second (1874) does not differ from the third, as regards the insects.

Davila, Pedro Franco. Catalogue systématique et raisonné des curiosités de la nature et de l'art qui composent le cabinet de M. Davila. Tome 3. 8°. Paris. 1767. pp. 6, 290, pl. 8 [in 1st part].

On pp. 223–24. Pétrifications animales de la septième classe. Entomolites.

Dawson, *Sir* John William. The chain of life in geological time; a sketch of the origin and succession of animals and plants. 16°. London. [1880.] pp. 16, 272, illustr.

In the chapter on the first air breathers a considerable number of insects are mentioned and figured, pp. 139–151, figs. 123, 126–132, including for the first time Prodryas, a fossil butterfly from Colorado.

Defrance, Jacques Louis Martin. Insectes (foss.). (Dict. sc. nat., 23: 524–526.) 8°. Paris. 1822.

A review of the older authors, questioning the validity of many of the fossils preserved in the rocks, although accepting those entombed in amber.

Demole, Isaac. See **Heer**, O.

Eaton, Alfred Edwin. A monograph on the ephemeridæ. (Trans. entom. soc. Lond., 1871, 1–164, pl. 1–6.) 8°. London. 1871.

Contains a chapter on fossil ephemeridæ, pp. 38–40, and a figure, pl. 1, fig. 10, of a single unnamed species from Solenhofen.

Esper, Eugen Johann Christoph. Ad avdiendam orationem pro capessendo munere philosophiæ professoris pvblici extraordinarii a rectore academiæ . . . Christiano Friderico Carolo Alexandro . . . gratiosissime sibi collato d. martii, 1783, recitandam omni qva decet observantia invitat simvlqve de animalibus oviparis et sanie frigida præditis in cataclysmo qvem svbiit orbis terrarum plerisqve salvis disserit Evgen. Joann. Christoph. Esper. 4°. Erlangæ. 1783. pp. 20.

Refers in a general way to fossil insects, pp. 18–19.

Fischer, Leopold Heinrich. Orthoptera europæa. 4°. Lipsiæ. 1853. pp. 20, 454, tab. 18.

Species fossiles, pp. 55–57, contains a bibliography of fossil orthoptera and a list of the species.

Fischer von Waldheim, Gotthelf. Prodromus petromatognosiæ animalium systematicæ continens bibliographiam animalium fossilium. 4°. Mosquæ. 1826. (Nouv. mém. soc. imp. nat. Mosc., 1: 301–374; 2: 95–277, 447–458.) 4°. Moscou. 1829–32.

Notices a few articles on fossil insects, tom. 2, pp. 219–20, 458.

———. Bibliographia palæontologcia animalium systematica editio altera aucta. 8°. Mosquæ. 1834. t. p., pp. 8, 414.

Contains slight additions to the preceding, with the notices on pp. 305, 372.

Fossil insects. (Pop. sc. monthly, 21: 567–568.) 8°. New York. 1882.

A general statement derived from Goss's papers.

Francius, Johannis. Prodromus arachnolithographiæ. (Misc. cur. acad. nat. cur., [2], 5: 462–464.) 4°. Norimbergæ. 1687.

Refers only to the use to which "lapides aranearum" are put in medicine.

Frič, Anton. See **Fritsch**, A.

Fritsch, Anton. Fossile arthropoden aus der steinkohlen und kreideformation Böhmens. 4°. Wien. 1882. pp. 7, pl. 2. (Mojs. u. Neum., Beitr. paläont. österr.-ung., 2: 1–7, taf. 1–2.) 4°. Wien. 1882.

Describes and figures a carboniferous ephemerid, Palingenia feistmanteli, and three beetles, mines of a Tinea, eggs of a saw fly, and cases of a phryganid from the cretaceous beds of Bohemia; a résumé of the very few known cretaceous

Fritsch, A.—Continued.
insects is added from Goss. Brauer and Fritsch both compared the may-fly, p. 3, to the living Palingenia longicauda.

Gadd, Pehr Adrian. Rön och undersökning, i hvad mån insecter och zoophyter bidraga til stenhärdningar. (Kongl. vet. acad. nya handl. 8: 98–106.) 16°. Stockholm. 1787.

Refers pp. 103–104 to "globuli arenacei" which he apparently considers as eggs of insects.

Geinitz, F. Eugen. Uebersicht über die geologie Mecklenburgs; nebst geologischer karte der flötzformation Mecklenburgs. 4°. Güstrow. 1885. 30 pp., 1 pl.

Contains slight notices of fossil insects.

Geinitz, Hanns Bruno. Grundriss der versteinerungskunde. 8°. Dresden und Leipzig. 1845 [also dated 1846]. pp. 10, 815, pl. 8, tabelle 1.

B. Arthrozoa, pp. 179–193, pl. 8; gives a brief general systematic account of fossil insects, with descriptions of a few forms and figures of Æschna longiolata and Œdipoda melanosticta. The second edition, 8°, Leipzig. 1856, not seen; according to Hagen the insects are upon pp. 179–90.

Gentry, T. G. Curious anomaly in history of certain larvæ of Acronycta oblinita Guenée, and hints on phylogeny of Lepidoptera. (Proc. acad. nat. sci. Phila., 1875: 24–54.) 8°. Philadelphia. 1875.

Some passing references to fossil insects on pp. 34–35.

Gerstaecker, Carl Eduard Adolph. Die klassen und ordnungen der arthropoden wissenschaftlich dargestellt in wort und bild. 5^er band, erste abtheilung. Crustacea (erste hälfte) mit 50 lithographirten tafeln. 8°. Leipzig und Heidelberg. 1866–79. *Also entitled*: Die klassen und ordnungen des thierreichs wissenschaftlich dargestellt in wort und bild. Von Dr. H. G. Bronn. Fortgesetzt von A. Gerstaecker. 5^er band: Gliederfüssler (arthropoda).

Contains in the introduction to the arthropoda in general: viii. Zeitliche verbreitung, divided into: 1. Allgemeiner charakter der fossilen arthropoden, pp. 287–292. 2. Aufeinanderfolge der formen in den verschiedenen erdschichten, pp. 293–295. Published in 1866? Under the first section the author notices the extremely small number of known fossil forms as compared with living types, and their almost complete typical agreement with existing forms; insisting that even the oldest not only fall into the orders, but even into the families of insects now extant.

Gerstaecker, C. E. A. See also **Packard**, A. S.

Gervais, Paul. See **Walckanaer**, C. A. et **Gervais**, P.

Giebel, Christoph Gottfried. Paläozoologie; entwurf einer systematischen darstellung der fauna der vorwelt. 8°. Merseburg. 1846. pp. 8, 360.

The insects, mentioned only by generic names, are systematically treated under each period: the period of water life on pp. 58–59, the transition period on pp. 144–148, and the period of land and air life on pp. 268–288.

——— Gæa excursoria germanica; Deutschlands geologie, geonosie und paläontologie als unentbehrlicher leitfaden auf excursionen und beim selbststudium. 16°., Leipzig. 1848. pp. 8, 510, (24), taf. 24.

Brief mention of insects on pp. 160, 266, 323, 442. Blattina didyma is figured on pl. 5, fig. 26.

——— Bericht über die leistungen im gebiete der paläontologie mit besonderer berücksichtigung der geognosie während der jahre 1848 und 1849. 8°. Berlin. 1851. pp. (4), 821.

5. Insecten, pp. 92–95, is mostly taken up with a notice of the first volume of Heer's Oeningen insects.

——— Deutschlands petrefacten; ein systematisches verzeichniss aller in Deutschland und den angrenzenden ländern vorkommenden petrefacten, nebst angabe der synonymen und fundorte. 8°. Leipzig. 1852. pp. 13, 706.

Arachnoidea, pp. 634–636; Insecta, pp. 636–656. A simple list.

——— Allgemeine palaeontologie; entwurf einer systematischen darstellung der fauna und flora der vorwelt; zum gebrauche bei vorlesungen und zum selbstunterrichte. 8°. Leipzig. 1852. pp. 8, 413.

Insects treated on pp. 117–118, 204–208, 276–286, under the same general divisions as in the author's Paläozoologie. The genera are enumerated.

——— Beiträge zur palaeontologie. 8°. Berlin. 1853. pp. 4, 192, pl. 3. (Jahresb. naturw. ver. Halle, 5: 287–478.) 8°. Berlin. 1853.

Contains: i. Die palaeontologie Deutschlands auf ihrem gegenwärtigen standpuncte, pp. 1–71 [287–357]. A tabular view of the genera found in Germany with the number of species of each includes, pp. 63–66 [349–352], the insects, 169 genera, and 377 or more species.—v. Bericht über den fortschritt der paläontologie während der jahre 1850–52, pp. 108–192. An analysis of the literature on fossil insects will be found on pp. 124–126 [410–412].

Giebel, C. G.—Continued.

——— Die insecten und spinnen der vorwelt mit steter berücksichtigung der lebenden insecten und spinnen; monographisch dargestellt. (Fauna der vorwelt mit steter berücksichtigung der lebenden thiere. 2^er^ band: Gliederthiere; erste abtheilung: Insecten und spinnne.) 8°. Leipzig. 1856. pp. 18, 511.

A systematic treatment of all the fossil insects then known with descriptions of nearly all; many are described and named for the first time from published plates. Notice especially the treatment of the illustrations of Brodie's fossil insects of England. Some new amber insects also appear. See also **Schlechtendal, D. von**, in Section VI.

——— Geologische übersicht der vorweltlichen insecten. (Zeitschr. gesammt. naturw., 8: 174–188.) 8°. Berlin. 1856.

A general review of authorities, with lists of the species mentioned in their works.

G[irard], M[aurice]. Les articulés fossiles. (La nature, 5: 301–302.) 4°. Paris. 1877.

Brief notice of recent papers by Brongniart, including that on Protomyia oustaleti.

Goss, Herbert. Introductory papers on fossil entomology. No. 1. On the importance of an acquaintance with the subject; its bearing on the question of the evolution of insects, and the evidence it affords of the antiquity of their family types. (Entom. monthl. mag., 15: 1–5.) 8°. London. 1878.

The same. No. 2. The comparative age of the existing orders of insects, and the sequence in which they appeared on the geological horizon. (Entom. monthl. mag., 15; 52–56.) 8°. London. 1878.

The series of twelve papers of which the above form the first two covers much the same ground as the earlier series of three given in Section VI; but the formations are followed in an ascending order, and the progress of insect life at each epoch is compared to that of other contemporary animals and plants. The lists of the other series are omitted, and the references to insects are mostly by genera.

The other papers of the series are entered under Section II, Section IV, and Section VI.

——— The geological antiquity of insects. Twelve papers on fossil entomology, reprinted, with some alterations and additions, from vols. xv and xvi of the Entomologist's monthly magazine. 8°. London. 1880. pp. (2), 50.

The preceding series, collected into a pamphlet.

Goss, H. See also **Bargagli**, P.; **Scudder**, S. H.; and **Fossil** insects.

Gray, John Edward. See **Buckland**, W.

Guérin-Méneville, Félix Édouard. Insectes fossiles. (Dict. classique hist. nat., 8: 579–581.) 16°. Paris. 1825.

A review of past writers, containing nothing new excepting an attempt to indicate the genera of amber insects figured by Sendel.

Haeckel, Ernst Heinrich Philipp August. Allgemeine entwickelungsgeschichte der organismen. Kritische grundzüge der mechanischen wissenschaft von den entstehenden formen der organismen, begründet durch die descendenz-theorie. (Generelle morphologie der organismen. Allgemeine grundzüge der organischen formen-wissenschaft, mechanisch begründet durch die von Charles Darwin reformirte descendenz-theorie. Zweiter band.) 8°. Berlin. 1866. pp. 160, 462, pl. 8.

In the introduction insects are treated on pp. 94–102, and the views entertained of the primeval forms of the different groups supported in part by paleontological evidence.

——— Natürliche schöpfungsgeschichte. Gemeinverständliche wissenschaftliche vorträge über die entwickelungslehre im allgemeinen und diejenige von Darwin, Goethe und Lamarck im besonderen. Vierte verbesserte auflage. 8°. Berlin. 1873. pp. 46, 688, pl. (1), 15.

TRANSLATION: The history of creation: or the development of the earth and its inhabitants by the action of natural causes. A popular exposition of the doctrine of evolution in general, and of that of Darwin, Goethe, and Lamarck in particular. The translation revised by E. Ray Lankester. 2 vols. 12°. New York. 1876.—vol. 1, pp. 20, 374, pl. (1), 1–3; vol. 2, pp. 8, 408, pl. 4–15.

Insects are treated on pp. 490–501 (transl., 2: 178–191) and their pedigrees considered, partly from geological considerations.

Hagen, Hermann August. Die fossilen libellen Europas. (Stett. entom. zeit., 9: 6–13.) 16°. Stettin. 1848.

A revision and brief description of the fifteen species then known.

——— Ueber die lebensweise der termiten und ihre verbreitung. (Königsb.

Hagen, **H. A.**—Continued. naturw. unterh., 2, iii: 53–75.) 8°. Königsberg. 1852.

Page 71 treats of the fossil species in amber, and from the tertiary beds of Oeningen and Radoboj, as proving a warmer climate in ancient Europe; of the sixty known species of white ants one-third were fossil.

——— Monographie der termiten. (Linn. entom., 10: 1–144, 270–325,—1855; 12: 1–342, pl. 1–3,—1858; 14: 73–128,—1860.) 8°. Stettin. 1855–60.

Includes a treatment of the (14) fossil species with the others. Besides this, under the head Literatur (palaeontologie), 10: 302–310; 12: 294–298, an analysis is given of works in which the fossil species have been previously treated. See also ⊙ in Section VIIIc.

——— Catalogue of the specimens of neuropterous insects in the collection of the British museum. Part I. Termitina. 12°. London. 1858. pp. 34.

Contains the fifteen fossil species described in the Monographie der termiten, from which indeed the whole was compiled [by Adam White?] without the knowledge of the reputed author. None of the fossil species are recorded as in the collections of the British museum.

——— Synopsis pseudoscorpionidum systematica. (Proc. Bost. soc. nat. hist., 13: 263–272.) 8°. Boston. 1870.

A synonymic list of the known species of which fifty are recorded, ten of them (one, however, doubly recorded) fossil, all but one being from amber.

——— See also **Packard**, A. S.; and **de Selys-Longchamps**, E., et **Hagen**, H. A.

Heer, **Oswald.** Zur geschichte der insekten. Vortrag. 8°. n. p., n. d. pp. 20. (Verhandl. schweiz. gesellsch. gesammt. naturw., 34: 78–97.) 8°. Frauenfeld. 1849. (Neues jahrb. f. mineral., 1850, 17–33.) 8°. Stuttgart. 1850.

A popular address, presenting a sketch of the sequence of insect life and the development of special groups, with general considerations based on a broad survey of the subject; by far the best account of the knowledge of that time. An abstract is given in Haidinger's Berichte, 6: 135–136. 8°. Wien. 1849.

TRANSLATION. On the history of insects. (Quart. journ. geol. soc. Lond., 6, ii: 68–75.) 8°. London. 1850.

Translation by T. R. J(ones).

Heer, O.—Continued.

——— Ueber die fossilen kakerlaken. (Vierteljahrsschr. nat. gesellsch. Zürich 9, iv: 273–302, pl.) 8°. Zürich. 1864.

The first attempt to classify the cockroaches of the carboniferous period, followed by a catalogue of the fifty-four known fossil species from all formations, and descriptions and figures of ten new species.

——— Die urwelt der Schweiz. Mit sieben landschaftlichen bildern, elf tafeln, einer geologischen übersichtskarte der Schweiz und zahlreichen in den text eingedruckten abbildungen. 8°. Zürich. 1865. pp. 29, 622, pl. 7, (4), map, 368 figs. in text.

Contains a general account of the lias insects, pp. 81–96, pl. 7–8; of those of Oeningen, pp. 355–397, figs. 215–323; and of the pleistocene of Utznach, etc., pp. 500–503, figs. 352–359. Many forms are described and figured for the first time.

TRANSLATION. Le monde primitif de la Suisse. Traduit de l'allemand par Isaac Demole. 8°. Genève et Bâle. 1872. pp. 16, 801, pl. 11, carte, 368 figs. in text.

The insects occupy p. 22, fig. 16 c (carboniferous); pp. 99–117, pl. 7–8 (lias); pp. 436–486, figs. 215–323 (Oeningen); and pp. 613–616, figs. 352–359 (Utznach, etc.). Some few additions are made by the author.

TRANSLATION. The primitive world of Switzerland, with 560 illustrations. By Professor Heer. Edited by James Heywood. 2 vols. 8°. London. 1876. Vol. 1, pp. 16, 393, map, pl. 6; —vol. 2, pp. 8, 324, pl. xi and 4 scattered plates.

The insects occupy i: p. 20, fig. 16 c (carboniferous); pp. 81–95, pl. 7–8 (lias); ii: pp. 9–56, figs. 211–323 (Oeningen); and pp. 167–170, figs. 352–358 (Utznach, etc.)

——— Die urwelt der Schweiz. Zweite umgearbeitete und vermehrte auflage. 8°. Zürich. 1879. pp. 19, 713, taf. 8, (4), map, 417 figs. in text.

The insects are here somewhat enlarged over the previous editions, occupying pp. 24–25, fig. 34 (carboniferous); pp. 91–105, pl. 7–8 (lias); pp. 380–422, figs. 250–365 (Oeningen); and pp. 530–533, figs. 395–402 (Utznach, etc.).

——— Flora fossilis arctica. Die fossile flora der polarländer. 6 v. 4°. Zürich. 1868–80. Bd. 1, 1868, pp. 7, 192, map, pl. 50;—bd. (2), 1869–71 (no t. p.), pp. 7; (i.) pp. 445–488, pl. 39–56; (ii.) pp. 41, pl. 10; (iii.) pp. 98, pl. 16; (iv.) pp. 51, pl. 15;—bd. 3, 1875, t. p., pp. 6; i. pp. 11, pl. 6; ii. pp. 138, (2), pl. 38; iii. pp. 29, pl.

Heer, O.—Continued.
5; iv. pp. 24;—bd. 4, 1877; i. pp. 7, 141, pl. 32; ii. t. p., pp. 122, pl. 31; iii. pp. 15, pl. 2.—bd. 5, 1878; i. pp. 4, 38, front., pl. 9; ii. t. p., pp. 58, pl. 15; iii. t. p., pp. 61, pl. 15; (iv.) pp. 11, pl. 4; (v.) pp. 6, pl. 1;—bd. 6. i, 1880, pp. (4), t. p., 34, 17, 38, pl. 9, 6, 3.

The contents will be found under the special papers.

——— Ueber die fossilen insekten Grönlands. (Flora foss. grönl., ii: 143–148, pl. 109 pars.) 4°. Zürich. 1883.

Mentions or describes and figures three Coleoptera from the cretaceous of Kome and Ivnangnit, eight Coleoptera, two Orthoptera, one Neuropteron, and two Hemiptera from the various tertiary deposits, but mostly from Atanekerdluk.

Extracted from Grönlands geol. undersögelse, which I have not been able to consult.

Heilprin, Angelo. The geographical and geological distribution of animals. (Internat. scient. series, LVII.) 8°. New York. 1887. pp. 12, 435. map.

Distribution of insects on pp. 279–285, Arachnida and Myriapoda, 285–286.

Heywood, James. See **Heer**, O.

Hislop, Stephen, and **Hunter**, R. On the geology and fossils of the neighborhood of Nágpur, Central India. (Quart. journ. geol. soc. Lond., 11: 345–383, pl. 10.) 8°. London. 1854.

Contains, p. 360, a reference to insects.

Holl, Friedrich. Handbuch der petrefactenkunde; mit einer einleitung über die vorwelt der organischen wesen auf der erde, von Dr. Ludwig Choulant. 1es bändchen. 16°. Dresden. 1829. pp. 8, 489. (Allg. taschenbibl. der naturwiss., 9ter theil.)

A brief account of fossil insects under the heading Entomolithen, pp. 138–141, with description of two species of Formica from amber.

——— Handbuch der petrefactenkunde; eine beschreibung aller bis jetzt bekannten versteinerungen aus dem thier- und pflanzenreiche zur leichten erkennung und auffindung der fossilien; mit einer einleitung über die vorwelt der organischen wesen auf der erde, von Dr. Ludwig Choulant. Neue ausgabe. 16°. Quedlinburg und Leipzig. 1843. pp. 8, 489. Published in four parts with continuous pagination, the t. p. of pt. 2–4 not included.

Appears to differ from the preceding only in title.

Horn, George Henry. See **Le Conte**, J. L., and **Horn**, G. H.

Hunter, R. See **Hislop**, S., and **Hunter**, R.

Jones, Thomas Rupert. See **Heer**, O.; and **Mantell**, G. A.

Jordan, Johann Ludwig. Mineralogische berg- und hüttenmännische reisebemerkungen, vorzüglich in Hessen, Thüringen, am Rheine und in saynaltenkirchnerischen gebiete. 8°. Göttingen. 1803.

Not seen; said to contain, on p. 199, some reference to fossil insects.

Keferstein, Christian. Die naturgeschichte des erdkörpers in ihren ersten grundzügen dargestellt. 2 v. 8°. Leipzig. 1834. 1er theil, pp. 11, 394; 2er theil, pp. 4, 896.

Abtheilung 2 (paläontologie), sechster abschnitt: Die fossilen insekten, pp. 325–347; under 7ter abschnitt the myriapods and arachnida, F and G, pp. 370–371, 375–376, 378. The species are enumerated in the two last-mentioned groups, but only the genera in the hexapods; the names are very frequently misspelled. See also **Vollmar**.

Kolbe, H. J. Die vorläufer (prototypen) der höheren insectenordnungen im paläozoischen zeitalter. (Berl. ent. zeitschr., 28: 167–170.) 8°. Berlin. 1884.

Has a few words only on paleontological evidence.

——— Einführung in die kenntnis der insekten. 8°. Berlin. 1889–1890.

The prospectus of this work, now in the course of publication, promises a section vii. entitled Die ausgestorbenen insekten (Paläontologie).

Lankester, Edwin Ray. See **Haeckel**, E. H. P. A.

LeConte, John Lawrence. Address before the American association for the advancement of science at Detroit, Michigan, August 13, 1875. 8°. Salem. 1875. t. p., pp. 18. (Proc. Amer. assoc. adv. sc., 24: 1–18.) 8°. Salem. 1876.

The distribution of certain North American beetles directly indicates a survival from cretaceous or even earlier times, pp. 4–7.

——— and **Horn**, G. H. Classification of the Coleoptera of North America. 8°. Washington. 1883. 38, 567 pp. (Smithson. misc. coll., 507.)

On p. 10 of the Introduction is a succinct account of the appearance of fossil insects.

Lemoine, *Dr.* [Insectes fossiles des environs de Reims.] (Bull. soc. ent. Fr., 1887: 17.) 8°. Paris. 1887.

Exhibition of drawings; no details.

Lesley, J. Peter. A dictionary of the fossils of Pennsylvania and neighboring States named in the reports and catalogues of the survey. (Vol. I, A–M.) 8°. Harrisburg. 1889. pp. 14, 437, 31. Figs. (Geol. surv. Penn. rep. P⁴.)

The known paleozoic insects are catalogued with a few of later date, their horizon indicated, and copies of illustrations given in many cases. Four hundred pages of the second volume have been printed but not yet published. The pagination is continued throughout the two volumes.

Lesser, Friedrich Christian. Lithotheologie, das ist: Natürliche historie und geistliche betrachtung derer steine. 16°. Hamburg. 1735. pp. 48, 300, (52), pl. 10.

In the seventh chapter, fourth division, fifth book: Von versteinerten thieren auf erden, so kein blut haben, pp. 553–561, he reviews what is known of fossil insects in his day.

In the Hamburg edition of 1751 (pp. 48, 1488, pl. 10) the same appears on pp. 633–639.

Lhwyd, E. See **Luidius,** E.

Linné, Carl von. Oeländska och gothländska resa på riksens högloflige ständers befallning förrättad åhr 1741; med anmärkningar uti oeconomien, naturalhistorien, antiquiteter, &c. med åtstillige figurer. 16°. Stockholm och Upsala. 1745. pp. (14), 344, 30, 2 maps, pl., figs.

Contains a mere mention, p. 59, of finding some small insects in a fossil state near Glömminge in Oeland.

TRANSLATION: Reisen durch Oeland und Gothland welche auf befehl der hochlöblichen reichstände des königreichs Schweden im Jahr 1741 angestellt worden. 16°. Halle. 1764. pp. (32), 364, (24), 2 maps, 2 pl.

The same on p. 68.

Lippi. [Lettre à M. Dodart.] (Hist. acad. sc., 1705: 36–37.) 4°. Paris. 1706.

Account of the discovery of supposed bee-cells (probably corals) in the rocks of the Montagnes de Siout, Upper Egypt.

⁂ It is somewhere stated that Lippi has mentioned the fossil insects of Oeningen.

Lochnerus, Johannes Henricus et Michael Fridericus. Rariora mvsei besleriani quae olim Basilius et Michael Ropertvs Besleri collegerunt aeneisque tabvlis ad vivvm incisa evvigarvnt: nunc commentariolo illustrata a Johanne Henrico Lochnero, vt virtvti toy makaritoy exstaret monvmentvm, denvo lvci pvblicae commissit & laudationem ejvs fvnebrem adjecit maestissimvs parens Michael Fridericvs Lochnervs. folio. n. p. 1716. pp. (22), 112, pl. 40, portr. 2.

Lochnerus, J. H. et M. F.—Continued.

Not seen; according to Kundmann, contains references to fossil insects on pp. 34, 100.

——— Michael Fredericus. See Lochnerus, J. H. et M. F.

Lubbock, *Sir* John. The president's address. (Trans. ent. soc. Lond., [3], 5, journ. of proc., 113–131.) 8°. London. 1867.

Records, pp. 128–129, the progress during the year in the study of fossil insects.

——— Monograph of the Collembola and Thysanura. 8°. London. 1873. pp. 10, 276, pl. 78.

His second chapter, miscalled Chapter III, is On the importance of the Collembola and Thysanura in relation to the evolution of the Insecta, pp. 40–54, and takes into consideration the facts then known of the geological history of the latter. It will be found suggestive.

——— On the origin and metamorphoses of insects. 16°. London. 1874. pp. 16, 108.

Contains a chapter [v] on the origin of insects, in which, on p. 86, is a general statement of the geological appearance of the different orders of insects.

——— Address read before the entomological society of London at the anniversary meeting on the 19th January, 1881. 8°. London. 1881. pp. 17. (Trans. ent. soc. Lond., 1880, journ. of proc., 41–55). 8°. London. 1881.

Refers, pp. 12–13 (50–51), to recent researches on fossil insects, particularly by Goss and Scudder.

Luidius, Edvardus. Edvardi Luidii apud oxonienses cimeliarchae ashmoleani Lithophylacei britannici ichnographia. Sive lapidum aliorumque fossilium britannicorum singulari figura insignium, quotquot hactenus vel ipse invenit vel ab amicis accepit: distributio classica: scrinii sui lapidarii repertorium cum locis singulorum natalibis exhibens; additis rariorum aliquot figuris aere incisis: cum epistolis ad clarissimos viros de quibusdam circa marina fossilia et stirpes minerales praesertim notandis. Editio altera: novis quorumdam speciminum iconibus aucta; subjicitur authorio praelecto de stellis marinis, *etc.* 8°. Oxonii. 1760. pp. (16), 156, (4), pl. 25.

Luidius, E.—Continued.

Epistola 3. Summarium literarum V. C. D. Richardi Richardson, M. D. De entrocho lapide, conchitis, et lithophytis seu plantis mineralibus agri eboracensis; de bufonibus mediis saxis inclusis, et depictis aliquot in schisto carbonariâ insectis. pp. 107-114, pl. 4, fig. 197 (4 figs.). First edition, Lipsiae, 1699, not seen.

Lyell, *Sir* Charles. Elements of geology, or The ancient changes of the earth and its inhabitants as illustrated by geological monuments; sixth edition, greatly enlarged and illustrated with 770 woodcuts. 8°. London. 1865. pp. 16, 794.

Contains references to fossil insects and some illustrations of them on pp. 243, 250, 255, 331, 425, 491. Earlier editions not examined.

McCook, Henry Christopher. American spiders and their spinning work. A natural history of the orbweaving spiders of the United States, with special regard to their industry and habits. 3 v. Imp. 8°. Philadelphia. 1889—189-. Vol. 1, pp. 372, figs. 345, 1889;—vol. 2, pp. 480, figs. 401, pl. 5, 1890;—vol. 3 not yet published.

Vol. 2 contains Part VI: Fossil spiders; chap. XV; pp. 446-469, figs. 372-401: Ancestral spiders and their habits. It gives a general review of fossil spiders, accompanied by several illustrations, with the general conclusion that the structure and habits of spiders have not greatly differed from the earliest times from which they are known.

McLachlan, Robert. Insects. (Encycl. brit., ed. 9, vol. 13, pp. 141-154.) 4°. Edinburgh [and Boston]. 1881.

Contains a paragraph, p. 141, on the Antiquity of insects.

Mantell, Gideon Algernon. The wonders of geology. First American from third London edition. 2 vols. 16°. New Haven. 1839. Vol. 1, pp. 16, 1-428, front., pl. 4;—vol. 2, pp. 7, 429-804, (24), pl. 6-10.

"Fossil insects" (of Aix). 1: 247-250, tab. 45. "Insects of the coal formation." 2: 679-680.

——— *The same:* 4th ed. London. 1840. 6th ed. 2 v. 16°. London. 1848. Vol. 1, pp. 15, 482;—vol. 2, pp. 483-938, plates as above. 7th ed. revised and augmented by T. Rupert Jones. 2 v. 16°. London. Vol. 1, pp. 24, 1-480, (1857);—vol. 2, pp. 16, 481-1019 (1858).

——— The medals of creation, or First lessons in geology and in the study of organic remains. 2 vols. 16°. London. 1844. Vol. 1, pp. 28, 1-456, pl. 1, 3-6;—vol. 2, pp. 6, 457-1016, pl. 2.

Fossil insects and spiders, pp. 570-584, with wood-cuts 122-124.

Mantel, G. A.—Continued.

——— *The same:* 2d edition entirely rewritten, 2 v. 16°. London. 1854. Vol. 1, pp. 321-446;—vol. 2, pp. 11, 447-930, plates as before.

——— Geological excursions round the Isle of Wight and along the adjacent coast of Dorsetshire; illustrative of the most interesting geological phenomena, and organic remains. 16°. London. 1847. pp. 428, pl. 20.

Refers to the discovery of fossil insects in tertiary and wealden beds at pp. 140, 400.

Marcou, John Belknap. A review of the progress of North American invertebrate palæontology for 1883. (Amer. nat., 18: 385-392.) 8°. Philadelphia. 1884.

Notices two or three papers on fossil insects.

The same for 1884. (Ibid., 19: 353-360.) 8°. Philadelphia. 1885.

Notices Scudder's papers on fossil insects.

——— A review of the progress of North American palæontology for the year 1884. 8°. Washington. 1885. 2, 20 pp. (Rep. Smiths. inst., 1884, 563-582.) 8°. Washington. 1885.

Contains brief notices, among others, of about twenty papers on fossil insects.

Maurice, Charles. Les insectes fossiles spécialement d'après les travaux de Sir [sic] Samuel Scudder. 8°. Lille. 1882. pp. 1-31. (Ann. soc. géol. Nord, 9: 152-183.) 8°. Lille. 1882.

A general account of what is known of fossil insects, arranged in geological succession.

Medlicott, H. B., and **Blanford**, W. T. A manual of the geology of India; chiefly compiled from the observations of the geological survey; published by order of the government of India. 8°. Calcutta. 1879. 2 vol. and map. Vol. 1. Peninsular area, pp. 18, 80, 1-444;—vol. 2. Extrapeninsular area, pp. 445-817, pl. 21.

On pp. 152, 154, 314 are references to insects found in the Mesozoic and Tertiary deposits of central India.

Meyer, Christian Erich Hermann von. Insekten, fossile. (Ersch u. Grüber, Allg. encycl. wissensch. u. kunste, sect. 2, th. 18, s. 536-541.) 4°. Leipzig. 1840.

A review of the literature, with nothing new.

——— See also **Reuss**, A. E., und **Meyer**, C. E. H. von.

Morris, John. A catalogue of British fossils, comprising all the genera and spec-

Morris, J.—Continued.
ies hitherto described: with references to their geological distribution and to the localities in which they have been found. 8°. London. 1843. pp. 11, 222.

Insecta, p. 69.

——— *The same.* Second edition, considerably enlarged. 8°. London. 1854. pp. 8, 372.

Insecta, pp. 116–118.
The recent third edition not examined.

Mourlon, M. Géologie de la Belgique. 2 vol. 8°. Bruxelles. 1880–1881. vol. 1, (1880), pp. 4, 317;—vol. 2, (1881), pp. 4, 16, 392.

Refers in three brief paragraphs (1: 125, 144) to the insects reported from the coal by van Beneden and de Borre, and from the oolite by the latter; the carboniferous species are also catalogued (2: 57) as well as larvæ of insects from the wealden of Hainaut (2: 82).

Müller, Fritz. Facts and arguments for Darwin; with additions by the author; translated by W. S. Dallas. 16°. London. 1869. pp. (8), 144.

Argues in favor of the late acquisition of "complete" metamorphoses in insects partly from paleontological data, in a foot-note to pp. 119–121; it does not occur in the original, entitled Für Darwin.

Münster, Georg, *graf zu.* Fossile fische, sepien, krebse, Monotis salinaria, saurier, algaciten von Oeningen, schildkröten in lias von Altdorf, Clymenia glossopteris, folliculites; tertiär formation in Norddeutschland. (Neues jahrb. mineral., 1834: 42–43.) 8°. Stuttgart. 1834.

Mentions the reception of a beetle from Solenhofen and insects from Oeningen.

Murchison, *Sir* Roderick Impey. Outline of the geology of the neighborhood of Cheltenham. A new edition, augmented and revised by James Buckman and H. E. Strickland. 8°. London. 1845. pp. 110, map, sect., pl. 13.

The first edition makes no allusion to fossil insects. The additions upon that subject in this are by Brodie (q. v. in Section IV), and Buckman. The insects are catalogued on pp. 68, 81–82, and figured on pl. 4, 8, 9. Reference is also incidentally made in several places to the insect beds of the district, but without special mention of their contents.

Mylius, G. F. Memorabilium Saxoniæ subterraneæ, pars prima; i. e. Des unterirdischen Sachsens weltsamer wunder der natur; erster theil. Worinnen die auf denen steinen an kräutern, bäumen, bluhmen, fischen, thieren und andern dergleichen besondere abbildungen, so wohl unsers Sachsenlandes als deren so es mit diesen gemein haben, gezeiget werden, mit vielen kupffern gezieret. 4°. Leipzig. 1709. pp. (6), 80, (19), front., pl. (13), fig.

Remarks on a fossil "wurm, welcher einem seidenwurm nicht ungleich scheinet," p. 56.

Nicholson, Henry Alleyne. A manual of palæontology for the use of students, with a general introduction on the principles of palæontology. 8°. London. 1872. pp. 18, 601, figs. 401.

Chapter xvii, Arachnida, Myriapoda, and Insecta, occupies pp. 181–187 and figs. 124–130. This very brief notice is mostly confined to the older insects.

——— *The same.* Second edition, revised and greatly enlarged. 2 vol. 8°. Edinburgh and London. 1879. Vol. 1, pp. 18, 511;—vol. 2, pp. 12, 531, figs.

Vol. 1 contains a chapter (20) on Arachnida, Myriapoda, and Insecta, pp. 398–409, figs. 250–258; slightly enlarged from the preceding. See also Nicholson, H. A., and Lydekker, R.

——— The ancient life-history of the earth, a comprehensive outline of the principles and leading facts of palæontological science. 8°. Edinburgh and London. 1877. pp. 19, 407.

Contains nothing original in insects; a few are figured.

——— See also **White**, C. A., and **Nicholson**, H. A.

——— and **Lydekker**, Richard. A manual of palæontology for the use of students, with a general introduction on the principles of palæontology. 3d edition, rewritten and greatly enlarged. Two vols. 8°. Edinburgh and London. 1889. Vol. 1, pp. 18, 1–885, figs. 1–812;—vol. 2, pp. 11, 886–1624, figs. 813–1419.

Chapt. 31, pp. 572–586, figs. 430–440, and chapt. 32, pp. 587–602, figs. 441–449, deal respectively with the arachnida and myriapoda, and the insecta. The figures, when of fossils, are all borrowed, excepting one showing the skin structure of a Carboniferous scorpion. This is one of the best summary accounts of fossil insects which has been published. The invertebrata are all by Nicholson alone.

Oppenheim, Paul. Die ahnen unserer schmetterlinge in der sekundär-und tertiärperiode. (Berl. entom. zeitschr., 29: 331–349, [3] pl.) 8°. Berlin. 1885.

Describes Palæocossus jurassicus from the brown Jura of Siberia, and characterizes the

Oppenheim, P.—Continued.

Rhipidorhabdi of the Bavarian white Jura with two genera and six species; these he regards as the ancestors of later Lepidoptera. A list of known tertiary Lepidoptera is appended, grouped by strata; a single species is described.

d'Orbigny, Alcide Dessalines. Recherches zoologiques sur l'instant d'apparition, dans les âges du monde, des ordres d'animaux, comparé au degré de perfection de l'ensemble de leurs organes. (Ann. sc. nat., (3), 13: 228–236, 2 tables.) 8°. Paris. 1850.

Insects are treated on pp. 232–233, and on both tables.

Oustalet, Émile. Paléontologie. (Girard, Les insectes; traité élémentaire d'entomologie, 1: 170–180.) 8°. Paris, 1873.

A good general account of fossil insects from the older to the newer strata.

Owen, *Sir* Richard. Palæontology, or a systematic summary of extinct animals and their geological relations. 2d edition. 8°. Edinburgh. 1861. pp. 16, 463.

The insects are briefly treated, without illustrations, on pp. 51–52. Nothing new is given except the expression of a doubt by Waterhouse whether the indusial limestone of Auvergne is to be referred to the cases of Phryganidæ.

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Entomolithi are treated in vol. 3, pp. 265–267, and pl. 17, figs. 2–6; larvæ of Odonata from Pappenheim being figured and some indistinguishable insects copied from Luidius.

Phillips, John. See **Woodward,** H. et al.

Pictet-Baraban, *afterward* **Pictet de la Rive,** François Jules (q. v.).

Pictet de la Rive, François Jules. Traité élémentaire de paléontologie ou Histoire naturelle des animaux fossiles considérés dans leurs rapports zoologiques et géologiques. 4 vol. 8°. Genève. 1844–46. T. 4. (1846), pp. 15, 458, pl. 20 in text.

IV^e classe, Arachnides, pp. 87–89; V^e classe, Insectes, pp. 91–114; VI^e classe, Myriapodes, pp. 115–116. No insects are figured.

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Insectes, pp. 301–405; Myriapodes, p. 405; Arachnides, pp. 406–410; Atlas, pl. 40–41. A few additions from Serres MS. are quoted.

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Quenstedt, Friedrich August. Handbuch der petrefaktenkunde. 8°. Tübingen. 1852. pp. 6, 792, pl. 62.

Arachnidæ, pp. 306–309; Insecta, pp. 309–319. The 2d edition not seen.

Quinet, Edgar. La création. 3e éd. 2 v. 12°. Paris. 1879. (Œuvres compl., xxi–xxii) vol. 1, 2 t. p., pp. 6, 359;—vol. 2, 2 t. p., pp. 382.

The first three chapters of book v are devoted to a popular and picturesque though often faulty account of the geological development of insects. The work has been translated into German by Cotta and passed through several French editions, the first in 1869 (?).

Reuss, August Emanuel. Die gegend zwischen Kommotau, Saaz, Raudnitz und Tetschen. (Löschn., Beitr. balneol., 2.) 8°. Prag. 1847.

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Contains Geognostische skizze der tertiären süsswasserschichten des nördlichen Böhmens, pp. 1–15, by Reuss alone, in which are recorded the discovery of Coleoptera at Kutschen (p. 6), and of insects, principally Coleoptera, at Luschitz (p. 7).

Roemer, Ferdinand. Lethæa geognostica oder Beschreibung und abbildung der für die gebirgs-formationen bezeichnendsten versteinerungen, herausgegeben von einer vereinigung von paläontologen. I. theil: Lethæa palæozoica von F. Roemer. With secondary title: Lethæa geognostica oder Beschreibung und abbildung der für die einzelnen abtheilung der palaeozoischen formation bezeichnendsten versteinerungen. Atlas, mit 62 tafeln. 8°. Stuttgart. 1876. 2 t. p., vorw. 2 p., taf. 62 (mit erläuterungen.)

A few insects are figured on plates 31, 47, and 56.

——— See also **Bronn**, H. G., und **Roemer**, F.

Scheuchzer, Johann Jacob. Meteorologia et oryctographia helvetica; oder Beschreibung der lufft-geschichten, steinen, metallen, und anderen mineralien des Schweitzerlands, absonderlich auch der überbliebselen der sündfluth. Ist der dritte oder eigentlich der sechste theil der Natur-geschichten des Schweitzerlands. 4°. Zürich. 1718. t. p., ff. 7, pp. 336, pl. (19).

Under insecta diluviana on p. 336 is a paragraph saying that while the author is acquainted with fossil insects he has seen none from Switzerland; quotes Langius.

Schlotheim, Ernst Friedrich von. Die petrefactenkunde auf ihrem jetzigen standpunkte durch die beschreibung seiner sammlung versteinerter und fossiler überreste des thier- und pflanzenreichs der vorwelt erläutert; mit 15 kupfertafeln. 8° (atlas, 4°). Gotha. 1820. pp. 64, 438.

Pp. 42–44 relate to insects, specified under six heads.

——— Nachträge zur petrefactenkunde; mit 21 kupfertafeln. 8°. Gotha. 1822. pp. 12, 100.

The same. Zweyte abtheilung; mit kupfertafeln. 8° (atlas, 4°). Gotha. 1823. pp. (4), 114.

The second part contains on pp. 60–61, taf. 22, fig. 10, what the author looks upon as the larva and nest of a Myrmeleon.

Schreber, Johann Christian Daniel. Lithographia halensis exhibens lapides circa Halam Saxonvm reperivndos systematice digestos secvndvm classes et ordines genera et species cvm synonymis selectis et descriptionibvs speciervm. Prefatvs est Ioh. Ioach Langivs. 16°. Halae. 1759. pp. 24, 80, pl. 1.

Describes Entomolithus coleopteri from Rothenburg, pp. 51–52.

Schröter, Johann Samuel. Entomolithen, versteinte insecten (Schröter, Lithol. real- u. verbal-lex., 2: 93–100.) 8°. Frankfurt. 1779.

A compilation from the writings of the older authors.

——— Insecten, entomolithen. (Schröter, Lithol. real- u. verballex., 3: 72–75.) 8°. Frankfurt. 1780.

General remarks of no present value.

——— Neue litteratur und beyträge zur kenntniss der naturgeschichte vorzüglich

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——— und **Meyer**, C. E. H. von. Die tertiären süsswassergebilde des nördlichen Böhmen's und ihre fossilen thierreste. (Palaeontogr., 2: 1-73, pl. 1-12.) 4°. Cassel. 1849-51.

Contains Geognostische skizze der tertiären süsswasserschichten des nördlichen Böhmens, pp. 1-15, by Reuss alone, in which are recorded the discovery of Coleoptera at Kutschen (p. 6), and of insects, principally Coleoptera, at Luschitz (p. 7).

Roemer, Ferdinand. Lethæa geognostica oder Beschreibung und abbildung der für die gebirgs-formationen bezeichnendsten versteinerungen, herausgegeben von einer vereinigung von paläontologen. I. theil: Lethæa palæozoica von F. Roemer. With secondary title: Lethæa geognostica oder Beschreibung und abbildung der für die einzelnen abtheilung der palaeozoischen formation bezeichnendsten versteinerungen. Atlas, mit 62 tafeln. 8°. Stuttgart. 1876. 2 t. p., vorw. 2 p., taf. 62 (mit erläuterungen.)

A few insects are figured on plates 31, 47, and 56.

——— See also **Bronn**, H. G., und **Roemer**, F.

Scheuchzer, Johann Jacob. Meteorologia et oryctographia helvetica; oder Beschreibung der lufft-geschichten, steinen, metallen, und anderen mineralien des Schweitzerlands, absonderlich auch der überbliebselen der sündfluth. Ist der dritte oder eigentlich der sechste theil der Natur-geschichten des Schweitzerlands. 4°. Zürich. 1718. t. p., ff. 7, pp. 336, pl. (19).

Under insecta diluviana on p. 336 is a paragraph saying that while the author is acquainted with fossil insects he has seen none from Switzerland; quotes Langius.

Schlotheim, Ernst Friedrich von. Die petrefactenkunde auf ihrem jetzigen standpunkte durch die beschreibung seiner sammlung versteinerter und fossiler überreste des thier- und pflanzenreichs der vorwelt erläutert; mit 15 kupfertafeln. 8° (atlas, 4°). Gotha. 1820. pp. 64, 438.

Pp. 42-44 relate to insects, specified under six heads.

——— Nachträge zur petrefactenkunde; mit 21 kupfertafeln. 8°. Gotha. 1822. pp. 12, 100.

The same. Zweyte abtheilung; mit kupfertafeln. 8° (atlas, 4°). Gotha. 1823. pp. (4), 114.

The second part contains on pp. 60-61, taf. 22, fig. 10, what the author looks upon as the larva and nest of a Myrmeleon.

Schreber, Johann Christian Daniel. Lithographia halensis exhibens lapides circa Halam Saxonvm reperivndos systematice digestos secvndvm classes et ordines genera et species cvm synonymis selectis et descriptionibvs speciervm. Prefatvs est Ioh. Ioach Langivs. 16°. Halae. 1759. pp. 24, 80, pl. 1.

Describes Entomolithus coleopteri from Rothenburg, pp. 51-52.

Schröter, Johann Samuel. Entomolithen, versteinte insecten (Schröter, Lithol. real- u. verbal-lex., 2: 93-100.) 8°. Frankfurt. 1779.

A compilation from the writings of the older authors.

——— Insecten, entomolithen. (Schröter, Lithol. real- u. verballex., 3: 72-75.) 8°. Frankfurt. 1780.

General remarks of no present value.

——— Neue litteratur und beyträge zur kenntniss der naturgeschichte vorzüglich

Schröter, J. S.—Continued. der conchylien und fossilien. 1^{er} band. 16^{c}. Leipzig. 1784. pp. (8), 550, (30), pl. 3.

V. Ueber einige merkwürdige versteinerungen. A. Von versteinten insecten, 410–413, pl. 3, fig. 16.

Scudder, Samuel Hubbard. The insects of ancient America. (Amer. nat., 1: 625–631, pl. 16.) 8°. Salem. 1868.

A popular account of those then known.

——— The fossil insects of North America. Geol. mag., 5: 172–177, 216–222.) 8°. London. 1868.

A review of the 87 species then known and of their geological relations. Abstracts will be found in the Amer. nat., 1: 557. 8°. Salem. 1867;—Can. nat., (2), 3: 293–294. 8°. Montreal. 1868;—Quart. journ. sc., 5: 409. 8°. London. 1868;—and Pop. sc. rev., 7: 318–319. 8°. London. 1868.

——— Entomological notes, V. 8°. Boston. 1876. pp. 72.

Reprints, with other matter, two papers containing notes on fossil insects, mentioned elsewhere in this bibliography.

——— Some recent publications on fossil insects. (Psyche, 3: 138.) 8°. Cambridge. 1880.

A review of Goss's papers.

——— A bibliography of fossil insects. (Harv. univ. bull., 2: 48–51, 87–88, 122–124, 157–162, 202–208, 252–257, 296–299, 333–337, 407–414.) 4°. Cambridge. 1881–1882. (Bibl. contr. libr. Harv. univ., 13.) 47 pp. 4°. Cambridge. 1882.

"More than four hundred authors are represented as having concerned themselves more or less with fossil insects."

——— [Minor notices of fossil insects.] (Psyche, 3: 277–279.) 4°. Cambridge. 1882.

Exhibition at meetings of the Cambridge entomological club of a cast of the first paleozoic insect ever found (p. 277), and of illustrations of the tertiary insects of North America (p. 278); as well as remarks on fossil species of Termes (p. 278); on some carboniferous insects, and on tertiary spiders from Florissant (p. 279).

——— Older fossil insects west of the Mississippi. (Proc. Bost. soc. nat. hist., 22: 58–60.) 8°. Boston. 1883.

Notice of Phthanocoris, found in Missouri, and of the discovery of triassic cockroaches in Colorado.

——— New genera and species of fossil cockroaches, from the older American rocks. (Proc. acad. nat. sci. Philad., 1885: 34–39.) 8°. Philadelphia. 1885.

Description of four genera and eleven species from the triassic (8 species) or carboniferous (3 species) rocks.

Scudder, S. H.—Continued.

——— The geological history of myriopods and arachnids. (Psyche, 4: 245–250.) 8°. Cambridge. 1885.

Much the same as the general remarks in Zittel's Handb. d. palæont. See also de Borre, A. P. de.

——— Systematische übersicht der fossilen myriopoden, arachnoideen, und insekten. (Zittel, Handb. d. palaeont., I. abth., Palaeoz., II: 721–831, figs. 894 1109.) 8°. München. 1885.

The first comprehensive review of these groups since the work of Pictet, in 1846, and Giebel, in 1856. Figures are given for nearly every family treated.

TRANSLATION.—Myriapodes. Arachnides. Insectes. (Zittel, Traité de paléontologie. Traduit par le Dr. C. Barrois, II, Paleoz., Part I: 720–833, figs. 911–1126.) 8°. Paris. 1887.

Translated by Mr. A. Six.

——— Systematic review of our present knowledge of fossil insects, including myriapods and arachnids. 8°. Washington. 1886. (Bull. U. S. Geol. Surv., vol. 5, No. 31.) 8°. Washington. 1886. 128 pp.

The original text furnished Dr. Zittel for his Handbuch, where the modern groups were more condensed. No illustrations, however, are given.

ABSTRACT.—Fossil insects. (Journ. roy. micr. soc., 1887: 582.) 8°. London, 1887.

——— The cockroach of the past. (Miall, Struct. cockroach, pp. 205–220, figs 119–125.) 8°. London. 1886.

A popular review of our present knowledge of extinct cockroaches, closing with a table of the 177 species known.

——— The work of a decade upon fossil insects, 1880–1889. (Pysche, 5: 287–295.) 4°. Cambridge. 1890.

A review of the advance that has been made in palentomology during the previous ten years, directing attention to the more important or interesting papers.

——— The fossil insects of North America, with notes on some European species. 2 vols. 4°. New York. 1890. vol. 1, pp. 10, 455, pl. 35;—vol. 2, pp. (2), 734, pl. 28.

A collection of the author's quarto publications on fossil insects. The separate volumes have independent title pages and are elsewhere noted, vol. 1, on pretertiary insects, in the next entry, vol. 2, on tertiary insects, in Section VI.

——— The pretertiary insects of North America, including critical remarks on and descriptions of some Eu-

Scudder, S. H.—Continued.
ropean forms. 4°. New York. 1890. pp. 10, 455, pl. 1-7, 7*a*, 8-34.

Forms Vol. 1 of the author's Fossil Insects of North America, with notes on some European species. Includes all the papers on the older insects, published in quarto form by the author between 1866 and 1890, together with a final chapter of a bibliographical nature. The separate papers, excepting the last, are elsewhere noticed.

——— See also **Marcou**, J. B., **Packard**, A. S., **Trouessart**, E.; **White**, C. A.

Selys-Longchamps, Michel Edmond *Baron* de, et **Hagen**, Hermann August. Revue des odonates où libellules d'Europe. 8°. Bruxelles, etc., 1850, pp. 22, 408, pl. 11, tableaux 6.

Contains, pp. 356-364, Énumération des odonates fossiles d'Europe, by Dr. Hagen, with a few notes by Baron de Selys; and pp. 365-368. Note sur l'énumération des odonates fossiles d'Europe, by de Selys. In the former, 39 species are enumerated with synonymy and brief notes; in the latter they are discussed by formations, and the conclusion reached that Æschnidæ preceded the Agrionidæ and Libellulidæ.

Sendel, Nathaniel. See **Guérin-Méneville**, F. E.

Serres, Pierre Marcel Toussaint de. See **Pictet de la Rive**, F. G.

Six, A. See **Scudder**, S. H.

Spener, Christian Maximilian. See **Vallisneri**, A.

Sterzel, J. T. Ueber fossile arachnoideen. (Ber. naturwiss. gesellsch. Chemnitz, 10: 68.) 8°. Chemnitz. 1887.

Abstract of remarks on the geological development of Arachnida.

Swinton, A. H. Notes on certain fossil Orthoptera claiming affinity with the genus Gryllacris. 8°. [London. 1874.] pp. 5, pl. (Geol. mag., (2), 1: 337-341, pl. 14.) 8°. London. 1874.

Entitled on cover of separate: On fossil Orthoptera. Claims to show that the carboniferous Corydalis brongniarti is a Gryllacris, and discusses the tertiary species which have been referred to Gryllacris.

——— Insect variety: its propagation and distribution; treating of the odours, dances, colours, and music in all grasshoppers, cicadæ, and moths; beetles, leaf insects, bees, and butterflies; bugs, flies, and ephemeræ; and exhibiting the bearing of the science of entomology on geology. 8°. London, etc. [1880.] pp. 10, 326, pl. 7.

Notices the stridulation of extinct insects, pp. 163-164; and reviews the strata containing insect remains in a discursive manner, pp. 260-271.

Taylor, J. E. The geological antiquity of flowers and insects. (Pop. science review, 17 (n. s., 2): 36-52, figs.) 8°. London. 1878.

Points out "a broad parallelism between the appearances of the more differentiated types of the vegetable kingdom and the development or appearance of various orders of insects;" and on pp. 43-44 gives an account of the general distribution of insects in geological times.

Taylor, Richard Cowling. Illustrations of antediluvian zoology. Articulated animals. (Loud. Mag. nat. hist., 3: 361.) 8°. London. 1830.

Notices Coleoptera from Stonesfield slate, coal shale of Yorkshire, peat beds of Norfolk, Yorkshire, and Lincolnshire coasts, in a submarine forest at Mount's Bay, and at the Danby coal pits, Yorkshire.

Thorell, Tamerlan. On European spiders; part 1. Review of the European genera of spiders, preceded by some observations on zoological nomenclature. 4°. Upsala. 1869-70. pp. 24, 242.

Contains remarks on fossil spiders, pp. 220-233, in which the affinities of the described species are discussed, and some new genera are founded.

Trouessart, E. Revue de paléontologie pour l'année 1887, dirigée par H. Douville. Arthropodes: Insectes, Myriapodes et Arachnides. (Ann. géol. univ., 4: 719-734). 8° Paris. 1888.

Principally occupied with an analysis of Scudder's contribution to Zittel's Handbuch.

Vallisneri, Antonio. Istoria del cameleonte affricano, e di varj animali d' Italia. 4°. Venezia. 1715. pp. (8), 200, tav. 5, 8.

Contains, pp. 181-190, an Epistola to Vallisneri by Spener upon various fossils, including insects, which are mentioned from the rocks of Thüringen on pp. 186-187, and from amber on p. 187. In the latter he recounts as in his possession "muscas, culices, araneas, formicas volantes, scolopendras aliaque animalcula."

Vidal y Careta, Francisco. Los insectos y las plantas; discurso. 8°. Habana. 1888. pp. [4], 28, 1 chart.

A general review of fossil insects, in geological sequence, and their correlation with vegetable life.

Vogt, Karl. Lehrbuch der geologie und petrefactenkunde. Zum gebrauch

Vogt, K.—Continued. bei vorlesungen und zum selbstunterrichte. Zweite vermehrte und gänzlich umgearbeitete auflage. 2 v. 8°. Braunschweig. 1854. Vol. 1, pp. 29, 642, pl. 8, (6);—vol. 2, pp. 31, 672, pl. (2).

Insects are meagerly treated, with two or three figures copied from other works, 1, pp. 336, 482, 638–939; 2, pp. 450, 451, 509–511.

Vollmar. Ueber fossile entomologie. (Gistl, Faunus, 2: 56–62.) 8°. München. 1835.

Of a general nature, closing with a list of fossil Coleoptera, borrowed from Keferstein.

Walchner, Fritz Hermann. Der practische naturforscher. Ein unentbehrliches hand- und hülfsbuch für freunde der naturwissenschaften. 8°. Karlsruhe. 1842–'44. pp. 1198. Each part also contains sep. t. p., and a f. table.

Abtheilung III, Der petrefactolog (1843), contains a chapter on Fossiler insecten, pp. 534–539, in which, especially in foot-notes, the genera then known are enumerated; nothing new is added.

Walckenaer, Charles Athanase, *baron*, et **Gervais,** Paul. Histoire naturelle des insectes. Aptères. 4 vol. and atlas of 52 plates. 8°. Paris. 1837–1847; tom. 1 (1837), 2 t. p., pp. 6, 682;—tom. 2 (1837), 2 t. p., pp. 549;—tom. 3 (1844), 2 t. p., pp. 8, 476;—tom. 4 (1847), 2t. p., pp. 16, 623.

References to fossils, all at second hand, will be found in vol. 3, pp. 6, 70–72, 84, 128, 283, 449; and vol. 4, pp. 329–330, 345, 356, 360. Attus fossilis from amber is described in vol. 1, p. 462.

Wallace, Alfred Russel. The geographical distribution of animals; with a study of the relations of living and extinct faunas as elucidating the past changes of the earth's surface. 2 v. 8°. London. 1876.—*The same:* New York. 2 v. 8°. 1876. Vol. 1, pp. 24, 503, pl. 13, maps 5;—vol. 2, pp. 10, 607, pl. 7, maps 2.

In a section entitled: Antiquity of the genera of insects, 1, pp. 166–168 (both editions), he concludes that "many of the larger and more important genera of insects date back to the beginning of the tertiary period, or perhaps beyond it; but the family types are far older." The section abounds in errors.

——— Colour in nature. (Nature, 19: 501–505.) 4°. London. 1879.

Review of Grant Allen's Colour sense, in which, p. 501, he contends for the probability of flowering plants and accompanying butterflies in the Carboniferous.

Wallerius, Johan Gottskalk. Systema mineralogicum, quo corpora mineralia in classes, ordines, genera et species suis cum varietatibus divisa describuntur, atque observationibus, experimentis et figuris æneis illustrantur. Editio altera correcta. 2 vol. 8°. Vindobonæ. 1778. Vol. 1, pp. (16), 448, (35), port, pl.;—vol. 2, pp. (12), 640, (60), pl.

§ 154, 2, pp. 538–546: Entomolithi, contains, under the heads of Typolithi and Entoma, a catalogue of the fossil insects then known.

Waterhouse, Charles O. See **Owen, R.**

Weyenbergh, H. Een kort overzigt der entomologische fossiele schatten van Teyler. (Tijdschr. entom., (2), 3: 195–196.) 8°. 'sGravenhage. 1867.

Brief notice of the fossil arthropods of Teyler's museum.

White, Adam. See **Hagen,** H. A.

White, Charles Abiathar. Progress of invertebrate palæontology in the United States for the year 1880. (Amer. nat., 15: 273–279.) 8°. Philadelphia. 1881.

Notices papers by Scudder.

——— and **Nicholson,** H. A. Bibliography of North American invertebrate paleontology, being a report upon the publications that have hitherto been made upon the invertebrate paleontology of North America, including the West Indies and Greenland. 8°. Washington. 1878. pp. 132. (Misc. publ. U. S. geol. surv. terr., 10)

Includes descriptive notes to most of the entries.

——— Supplement to the Bibliography of North American invertebrate paleontology. (Bull. U. S. geol. surv. terr., 5: 143–152.) 8°. Washington. 1879.

Literature of 1878 with omissions from the previous list.

Winkler, T. C. Musée Teyler. Catalogue systématique de la collection paléontologique. 8°. Harlem. 1863. t. p., pp. 4, 608.

Arachnides, p. 421; Insectes, pp. 422–429. 265 numbers are given, including over two hundred undetermined species.

Woodward, Henry, *et al.* Notes on fossil insect remains. (Geol. mag., 10: 1–2.) 8°. London. 1873.

A résumé, by the editors of the journal, of papers that have appeared on the subject in their magazine, by Phillips, Kirkby, Scudder, Woodward, and Butler.

Zittel, Karl A. See **Scudder,** S. H.

II.—GENERAL FOR PALEOZOIC TIME.

⁂ See also under Section I.

Archiac, Étienne Jules Adolph Victe *vicomte* **d'** et **Verneuil**, Philippe Édouard de. On the fossils of the older deposits in the Rhenish provinces; preceded by a general survey of the fauna of the palæzoic rocks, and followed by a tabular list of the organic remains of the Devonian system in Europe. (Trans. geol. soc. Lond., (2), vol. 6, pp. 303–410.) 4°. London. 1842.

Contains, p. 330, a section (ix) of a single paragraph on what was then known of paleozoic insects.

Binney, Edward William. On two remarkable fossil insects from the lower coal measures near Huddersfield. (Proc. lit. phil. soc. Manch., 6: 59.) 8°. Manchester. 1867.

(Geol. mag., 4: 132.) 8°. London. 1867.

Notices the occurrence of Xylobius sigillariæ and of a supposed coleopterous larva.

Borre, Alfred Preudhomme de. Note sur des empreintes d'insectes fossiles, découvertes dans les schistes houillers des environs de Mons. (Comptes rendus soc. ent. Belg., (2), xii: 4–7; and discussions on same by Breyer and others, 7–8.) 8°. Bruxelles. 1875.

Describes and discusses the affinities of two fossil insects which he considers orthopterous; and of a third which he compares to a carboniferous Termes. Breyer considers one of the first wings as lepidopterous.

——— Sur trois nouveaux insectes fossiles. (Comptes-rendus soc. ent. Belg. (2), xviii: 17.) 8°. Bruxelles. 1875.

(Ann. soc. ent. Belg., 18, comptes rendus, 115.) 8°. Bruxelles. 1875.

Notice of the discovery of two Neuroptera from the same beds as Breyeria and of a supposed dipteron from the Jurassic beds of Luxembourg; M. de Borre informs me that closer examination proves the latter to be an homopteron.

——— Complément de la note sur des empreintes d'insectes fossiles. (Comptes rendus soc. ent. Belg. (2), xiii: 7–11; and discussion on same by Fologne, Lafontaine, Plateau, Breyer, and de Selys, 11–12.) 8°. Bruxelles. 1875.

Now maintains the correctness of Breyer's belief that one of the wings is lepidopterous, or prolepidopterous, and changes the generic name from Pachytylopsis, formerly given, to Breyeria. Fologne and Lafontaine contend that there are two overlapping wings. Plateau at first thought it the tip of a coleopterous wing of gigantic size, but withdrew his opinion. Breyer maintained the latter view impossible, and de Selys thought it rash to refer a reticulated wing to the Lepidoptera. These two papers, without the discussion, were republished separately as follows:

——— Notes sur des empreintes d'insectes fossiles découvertes dans les schistes houillers des environs de Mons. 8°. Bruxelles. 1875. pp. 1–10, pl. 5–6. Ann. soc. ent. Belg., 18, pp. 39–42, 56–60, pl. 5–6. 8°. Bruxelles. 1875.

Première note, pp. 1–6 (39–42). Seconde note, pp. 6–10 (56–60). Second note reprinted as follows:

Empreintes d'insectes fossiles découvertes dans les schistes des environs de Mons. (Journ. zool., 4: 291–97.) 8°. Paris. 1875.

Unaccompanied by the plate. Gervais adds brief notes.

——— Analyse de deux travaux récents de MM. Scudder et Ch. Brongniart sur les articulés fossiles. 8°. Bruxelles. 1885. pp. 7 (Comptes rend. soc. entom. Belg., (3), lxv: 131–137.) 8°. Bruxelles. 1885.

See also notes on same (Ibid, (3), lxviii: 17; (3), lxx: 63). 8°. Bruxelles. 1886. Deals with the general classification of paleozoic hexapods.

——— See also **Scudder**, S. H.; **Gab es** schon u. s. w.

Bradley, Frank Howe. Geology of Grundy County. (Geol. surv. Ill., 4, chapt. 13, pp. 190–206.) 8°. [Springfield.] 1870.

Contains p. 196, a list of the carboniferous insects of Mazon Creek.

Brauer, Friedrich. Systematisch-zoologische studien. 8°. Wien. 1885. pp. 177, pl. 1. (Sitzungsb. kais. akad. wiss. Wien, 91: 237–413, pl.) 8°. Wien. 1885.

Discusses in several places the relationship of many of the older insects, and especially of Eugereon, with remarks on synthetic types.

——— Ansichten über die paläozoischen insecten und deren deutung. (Ann. naturh. hofmus., 1: 87–126, pl. 7–8.) 8°. Wien. 1886.

Expands his previously expressed views at greater length, reviewing in detail the structure of many of the older types, and strenuously opposing the views of Scudder upon their general classification.

Breyer, Albert. See **Borre, A. P. de.**

Brodie, P. B. Fossil insects in the carboniferous rocks. (Geol. mag., 4: 285–286.) 8°. London. 1867.

A brief enumeration of the different forms known to the author.

Brongniart, C. J. E. Sur un nouvel insecte fossile des terrains carbonifères de Commentry (Allier) et sur la faune entomologique du terrain houiller. (Bull. soc. géol. France, (3), 11: 142–151, pl. 4.) 8°. Paris. 1883.

An account of the insects of Commentry, with a description of Titanophasma, which is also figured, and ending with a general account and classed list of carboniferous insects.

——— Aperçu sur les insectes fossiles en général et observations sur quelques insectes des terrains houillers de Commentry (Allier, France). 16°. Paris. [1883.] 8 pp. (Le naturaliste, 5: 266–268.) 4°. Paris. 1883.

A brief general review, followed by an account of the rich locality of Commentry, largely based on his paper of the previous year read before the Geological society.

The same. ([Publications] soc. industr. minérale. Distr. du centre.) 8°. Montluçon. 1883. 15 pp., pl.

The same as preceding, with slight additions, especially in the description of Titanophasma, which is also figured, the description taken from his Geological society's paper.

——— Les insectes fossiles des terrains primaires. Coup d'œil rapide sur la faune entomologique des terrains paléozoïques. 8°. Rouen. 1885. [22] pp., [5] pl. (Bull. soc. amis sc. nat. Rouen, 1885: 50–68, pl. 1–3.) 8°. Rouen. 1885.

Forms part of the Compte rendu de la 23ᵉ réunion de délégués des sociétés savantes à la Sorbonne (1888) par Henri Gadeau de Kerville.

The paper is principally concerned with the carboniferous insects of Commentry, for which a large number of family, generic, and specific names are proposed. The separate copy contains two (unnumbered) plates not in the society's issue, and a sheet of errata. Many of the Commentry insects are figured on these plates for the first time. (See also Borre, A. P. de.)

TRANSLATION: Die fossilen insecten der primären schichten. (Jahrb. k. k. geol. reichsanst., 35: 649–662. 8°. Wien. 1885.

Contains no plates.

TRANSLATION: The fossil insects of the primary group of rocks: a rapid survey of the entomological fauna of the palæozoic systems. Transl. by Mark Stirrup. 12°. Salford. 1885. pp. 20. (Trans. Manch. geol. soc., 18: 269–288, pl.) 8°. Manchester. 1885.

Brongniart, C. J. E.—Continued.

A discussion, participated in by Messrs. Stirrup, Ormerod, Dickinson, Burnett, Boyd Dawkins, Wild, and Watts, will be found on pp. 267–269, 289–292, 328–331. No plate appeared in the separate.

Reprint of the last. (Geol. mag., n. s. (3), 2: 481–491, pl. 12.) 8°. London. 1885.

The plate is the same as plate 4 of the original, and is wrongly said to have been published by the Rouen Society.

ANALYSIS: (Entom. nachr., xi: 330–332.) 8°. Berlin. 1885.

ANALYSIS: (Proc. ent. soc. Lond., 1886: 3–8.) 8°. London. 1886.

By Herbert Goss.

ABSTRACT: Fossile insecten der primärzeit. (Kosmos, 18: 64–67.) 8°. Stuttgart. 1886.

ABSTRACT: Les insectes fossiles des terrains primaires. (Rev. scient., (3), 36 : 275–278, fig.) 4°. Paris. 1885.

——— Coup d'œil rapide sur la faune entomologique des terrains paléozoïques. (Ann. géol. univ. 5: 1019–1024.) 8°. Paris. 1889.

The same in substance as the earlier paper with a similar title, but with some modifications due to subsequent researches.

Burnett, R. T. [Discussion of Stirrup's translation of Brongniart's paper.] (Trans. geol. soc. Manch., 18: 290.) 8°. Manchester. 1885.

Very general remarks.

Dawkins, William Boyd. [Discussion of Stirrup's translation of Brongniart's paper.] (Trans. geol. soc. Manch., 18: 328–329, 331.) 8°. Manchester. 1886.

Myriapods found in nodules in the valley of the Irwell near Clifton; Trigonocarpa bored by insects.

Dawson, *Sir* **J. W.** On the conditions of the deposition of coal, more especially as illustrated by the coal-formation of Nova Scotia and New Brunswick. (Quart. journ. geol. soc. Lond., 22: 95–169, pl. 5–12.) 8°. London. 1866.

Merely refers (p. 145) to the occurrence of a myriapod and one insect at the Joggins.

———. On some remains of palæozoic insects recently discovered in Nova Scotia and New Brunswick. (Can. nat. [n. s.],

Dawson, *Sir* J. W.—Continued. 3: 202–206, 5 woodc. in text.) 8°. Montreal. 1867.

(Geol. mag., 4: 385–388, pl. 17, figs. 1–5.) 8°. London. 1867.

Haplophlebium barnesii and four of the Devonian insects are described and figured for the first time by Scudder.

ABSTRACT: On insects from the Carboniferous and Devonian formations. (Geol. mag., 4: 374.) 8°. London. 1867.

Taken from the Montreal Gazette of May 1, 1867. An abstract also appears in Amer. journ. sc., (2), 44: 116. 8°. New Haven. 1867.

——— Acadian geology. The geological structure, organic remains, and mineral resources of Nova Scotia, New Brunswick, and Prince Edward Island. 2d edition, revised and enlarged, with a geological map and numerous illustrations. 8°. London. 1868. pp. 27, 694, pl. (9), map, figs. 231, (1), in text.

Pages 386–388, 524–526, figs. 153, 181–184, contain descriptions and illustrations of carboniferous and devonian insects by Scudder. There is also a Note on the myriapods of the coal formation on pp. 495–496, by the same.

——— Supplement to the second edition of Acadian geology, containing additional facts as to the geological structure, fossil remains, and mineral resources of Nova Scotia, New Brunswick, and Prince Edward Island. 8°. London. 1878. pp. 102.

This supplement bound with reissue of 2d ed. forms 3d ed. Mentions and figures, pp. 53, 55, 56, some carboniferous insects and myriapods which had been described by Scudder since the previous edition.

——— Ancient insects and scorpions. (Can. rec. sc., 1: 207–208.) 8°. Montreal. 1885.

Notice of Palæophonus nuncius and Palæoblattina douvillei.

Dickinson, Joseph. [Discussion of Stirrup's translation of Brongniart's paper.] (Trans. geol. soc. Manch., 18: 289, 291, 328, 329.) 8°. Manchester. 1885–'86.

Believes all the paleozoic insects to be amphibious.

Dohrn, Anton. Zur kenntniss der insecten in den primärformationen. (Palaeontogr., 16: 129–134, taf. 8.) 4°. Cassel. 1867.

Further discussion of Eugereon and description of two new Carboniferous insects. It is proposed to extend the new order, Dictyoptera, so as to embrace a number of the earlier insects.

Dohrn, A.—Continued.

——— Eugereon boeckingi und die genealogie der arthropoden. (Stett. entom. zeit., 28: 145–153, pl. 1 [41].) 8°. Stettin. 1867.

Fuller discussion of the affinities of Eugereon and its bearings on Haeckel's views of the genealogy of insects.

Fleck, Hugo. See **Geinitz**, H. B., **Fleck**, H., und **Hartig**, E.

Fletcher, John. A dreadful phenomenon described and improved; being a particular account of the sudden stoppage of the river Severn, and of the terrible desolation that happened to the birches between Coalbrook Dale and Buildwas Bridge in Shropshire on Thursday morning, May 27, 1773. (Works of John Fletcher, Vicar of Madeley, 1: 229–246.) 12°. London. [1773?]

On p. 237 "a great many [fossils] were found bearing the impression of a flying insect, not unlike the butterfly into which silk-worms are changed."

Fologne, Egide. See **Borre**, A. P. de.

Fossil insects. (Amer. nat., 2: 163, figs. 1, 2.) 8°. Salem. 1868.

Note (not original) on Xenoneura and Palæocampa.

Fritsch, A. Fauna der steinkohlenformation Böhmens. (Archiv naturw. landesdurchf. Böhmen, bd. 2, abth. 2, th. 1, pp. 1–16, pl. 1–4.) 8°. Prag. 1874.

Describes Palaranea borassifoliæ for the first time, and gives new figures and descriptions of four previously-known insects, including the famous scorpions described by Corda.

——— Fauna der gaskohle und der kalksteine der permformation Böhmens. Bd. 1, heft 1. 4°. Prag. 1879. pp. 92, taf. 12.

Contains pp. 26–31: Vorläufige uebersicht der in der gaskohle und den kalksteinen der performation in Böhmen vorgefundenen thierreste. On p. 31 appears a list of five insects, to three of which (Myriapoda) names are given, from Nyřan and Kounová.

Gab es schon während der steinkohlenzeit schmetterlinge? (Kosmos, 5: 218–219.) 8°. Leipzig. 1879.

An account of the discussion of this subject, by Wallace, MacLachlan, de Borre, etc., in Nature and elsewhere.

Geinitz, Hans Bruno, **Fleck**, Hugo, und **Hartig**, Ernst. Die steinkohlen

Geinitz, H. B., etc.—Continued. Deutschland's und anderer länder Europa's, ihre natur, lagerungs-verhältnisse, verbreitung, geschichte, statistik und technische verwendung. 2 bd. 4°. München. 1865. Bd. 1 (*also entitled:* Geologie der steinkohlen Deutschland's und anderer länder Europa's, mit hinblick auf ihre technische verwendung; von Geinitz). pp. 10, 420, atlas, ff. 3, pl. 28. Bd. 2 (also entitled: Geschichte, statistik und technik der steinkohlen Deutschland's und anderer länder Europa's; von Fleck u. Hartig). pp. 8, 423, (4), map.

Contains (bd. 1, pp. 146–150). Organische überreste der steinkohlenformation des Saarbrückenschen, in which, pp. 149, 150, appear lists of the Carboniferous and Dyas insects of the basin of the Saar.

——— und **Gutbier**, A. von. Die versteinerungen von Obersachsen und der Lausitz. (Gein., Gäa von Sachsen. pp. 61–142.) 8°. Dresden und Leipzig. 1843.

Insects at pp. 66, 116, 140; nothing new.

Germar, Ernst Friedrich. Beschreibung einiger neuen fossile insecten (i) in den lithographischen schiefern von Bayern und (ii) in schieferthon des steinkohlengebirges von Wettin. (Münst., Beitr. z. petref., heft 5, pp. 79–94, taf. 9, 13.) 4°. Bayreuth. 1842.

The second part, pp. 90–94, pl. 13, describes and figures four cockroaches and a neuropteroid insect from the coal measures. See also Voigt, C. G. See also the same title in Section IV.

——— Die versteinerungen des steinkohlengebirges von Wettin und Löbejün in Saalkreise. *Also entitled:* Petrificata stratorum lithanthracum Wettini et Lobejuni in circulo Salæ reperta. f°. 8 hefte [fasc.]. Halle. 1844–53. pp. 4, 116, taf. [tab.], 40. 1es heft, pp. i.–iv., 1–12, pl. 1–5, 1844; 2es heft, pp. 15–28, pl. 6–10, 1845; 3es heft, pp. 29–40, pl. 11–15, 1845; 4es heft, pp. 41–48, pl. 16–20, 1847; 5es heft, pp. 49–60 (59), pl. 21–25, 1848; 6es heft, pp. 61–80, pl. 26–30, 1849; 7es heft, pp. 81–102, pl. 31–35, 1851; 8es heft, pp. 103–116, pl. 36–40, 1853.

Ueberreste von insekten [Insectorum vestigia], pp. 81–88, pl. 31, 39 (1851), almost entirely devoted to the cockroaches of the paleozoic rocks, on which it is the first important publication.

Gervais, Paul. See **Borre**, A. P. de.

Goldberger, F. See **Goldenberg**, F.

Goldenberg, Friedrich. Prodrom einer naturgeschichte der fossilen insecten der kohlenformation von Saarbrücken. (Sitzungsb. math.-nat. cl. akad. wiss. Wien, 9: 38–39.) 8°. Wien. 1852.

A nominal list, without description, of six new Orthoptera and Neuroptera. The author's name is accidentally given as Goldberger.

——— [Brief] an Herrn v. Carnell. (Zeitschr. deutsch. geol. gesellsch., 4: 246–248.) 8°. Berlin. 1852.

Much the same as the preceding, but with a few more details and comparisons, and without mention of specific names.

——— Ueber versteinerte insectenreste im steinkohlengebirge von Saarbrücken. (Amtl. ber. vers. gesellsch. deutsch. naturf., 29: 123–126.) 4°. Wiesbaden. 1853.

Only the first half relates to insects in which a general account of his discoveries at Saarbrück is given; the latter half refers to the plants found in the same deposits.

——— Die fossilen insecten der kohlenformation von Saarbrücken. Cassel. 1854. t. p., pp. 24, pl. 4. 4°. (Palaeontogr., 4: 17–40, tab. 3–6.) 4°. Cassel. 1854.

A careful description and excellent illustration of the species mentioned in his previous papers, with as many more. The remarkable genus Dictyoneura is introduced with three species.

———. Beiträge zur vorweltlichen fauna des steinkohlengebirges zu Saarbrücken. The title within is: Uebersicht der thierreste der kohlenformation von Saarbrücken. (Jahresb. k. gymn. u. vorsch. Saarbr., 1867, pp. 1–26.) 4°. Saarbrücken. 1867.

The insects occupy pp. 7–20 and swell the number of Saarbrück insects to seventeen. References are made to two plates, but these are not given until the same paper appears as the first heft of his Fauna saraep. foss.

——— Zur kenntniss der fossilen insecten in der steinkohlen-formation. (Neues jahrb. f. miner., 1869, pp. 158–168, pl. 3.) 8°. Stuttgart. 1869.

Description and illustration of ten new Blattinæ and two Homoptera.

——— Fauna saraepontana fossilis. Die fossilen thiere aus der steinkohlenformation von Saarbrücken. 1es heft, mit zwei tafeln abbildungen. 4°. Saarbrücken. 1873. t. p., pp. 26, (2), pl. 2. 2es heft, mit zwei tafeln abbildungen. 4°. Saarbrücken. 1877. pp. 4, 54, pl. 2.

The first part, with the exception of the introduction and the addition of the plates referred to

Goldenberg, F.—Continued.

in the text, is an exact reproduction of the paper published six years earlier in the report of the Saarbrück gymnasium, no mention being made of the author's own additions to the Carboniferous fauna since it was issued. These and others appear in the second part, where the insects occupy pp. 8–34 and pl. 1. The order Palæodictyoptera is here instituted for the Dictyoptera (nom. præocc.) of Dohrn. The number of species treated is twenty-seven, not, however, all confined to Saarbrück; this brings the number of Saarbrück insects as given in the catalogue, pp. 50–51, to thirty-eight, and renders this work, for its time, the most important contribution to paleozoic entomology that had ever appeared. A nominal list of 76 fossil cockroaches, based on that of Heer, is given on pp. 19–21. A supplement-heft was promised, but has never appeared.

Goss, H. Introductory papers on fossil entomology. No. 3. Palæozoic time. On the insecta of the Devonian period, and the animals and plants with which they were correlated. (Entom. monthl. mag., 15: 124–127.) 8°. London. 1878.

The same.—No. 4. Palæozoic time. On the insecta of the Carboniferous period, and the animals and plants with which they were correlated. (Entom. monthl. mag., 15: 169–173.) 8°. London. 1879.

The same.—No. 5. Palæozoic time. On the insecta of the Permian period, and the animals and plants with which they were correlated. (Entom. monthl. mag., 15: 226–228.) 8°. London. 1879.

See the same title in Section I, Section IV, and Section VI.

——— Three papers on fossil insects, and the British and foreign formations in which insect remains have been detected. No. 3. The insect fauna of the primary or palæozoic period. 8°. [London. 1880.] pp. 32. (Proc. geol. assoc., 6, no. 6, pp. 271–300.) 8°. London. 1880.

ABSTRACT: The insect fauna of the primary or palæozoic period and the British and foreign strata of that period in which insect remains have been detected. (Geol. mag. (n. s.), 6: 230–232.) 8°. London. 1879.

The papers, of which this is the third, contain a careful review of the literature of fossil insects; each geological formation is separately treated, containing references to all the genera, and in very many cases to the species found in it, with full bibliographical references. It will be found very useful to the general student.

The other papers are given in Section IV and Section VI, q. v.

Goss, H.—Continued.

——— On some recently discovered Insecta from carboniferous and Silurian rocks. 8°. [London.] 1885. pp. [2], 21. (Proc. geol. assoc., 9, No. 3: 131–151.) 8°. London. 1885.

A general résumé of the progress of discovery since his previous collation, in which the deposits of Great Britain, the continent of Europe, and America are separately treated, followed by a general summary.

ABSTRACT. Fossil insects. (Entom., 18: 196–197.) 8°. London, 1885.

TRANSLATION OF ABSTRACT. Fossile insekten. Stett. ent. zeit., 46: 380–381.) 16°. Stettin. 1885.

Gutbier, August von. See **Geinitz**, H. B., und **Gutbier**, A. von.

Hartig. Ernst. See **Geinitz**, H. B., **Fleck**, H., und **Hartig**, E.

Higgins, H. H. President's address [to the Liverpool naturalists' field club]. 8°. [Liverpool. 1871.] 11 pp. 2 pl.

Mention, p. 10, of a few insect remains found in carboniferous rocks in the Ravenhead cutting near Liverpool; one wing is figured.

Humbert, Alois. See **Scudder**, S. H.

James, Joseph Francis. Remarks on a supposed fossil fungus from the coal measures. (Journ. Cinc. soc. nat. hist., 8: 157–159.) 8. Cincinnati. 1885.

Considers Rhizomorpha sigillariæ the burrow of an insect larva.

Kliver, Moritz. Ueber einige neue Blattinarien-, zwei Dictyoneura- und zwei Arthropleura-arten aus der Saarbrücker steinkohlenformation. 4°. Cassel. 1883. 19 pp., 3 pl. (Palæontogr., 29 (3,v): 249–269, pl. 34–36.) 4°. Cassel. 1883.

The Blattinariæ are seven in number, of which all but two are new, as are the species of Dictyoneura; all are figured.

——— Ueber einige neue arthropodenreste aus der saarbrücker und der wettin-löbejüner steinkohlenformation. (Palæontogr., 32: 99–115. pl. 14 (7). 4°. Stuttgart. 1886.

Eleven different objects are described and figured, including some uncertain fragments of bodies; most are wings and include two Termes, a Dictyoneura, an Acridites and three Blattinariæ.

K[ušta, Johann]. Noví členovci z českého útvaru kamenouhelného. Vesmír 13: 97–98. figs.) 4°. Praze. 1884.

Kušta, J.—Continued.

Popular account of the older insects of Bohemia with a list of a dozen species and figures of four or five.

——— Neue fossile arthropoden aus dem nöggerathienschiefer von Rakonitz. 8°. Prag. 1885. 8 pp. fig. (Sitzungsb. k. böhm. gesellsch. wiss., 1885: 592–597). 8°. Prag. 1885.

Describes Eolycosa and Eojulus and gives a list of seventeen species of arthropods from the carboniferous beds of Rakonitz.

Lacoe, R. D. List of palæozoic fossil insects of the United States and Canada, alphabetically arranged, giving names of authors, geological age, locality of occurrence, and place of preservation, with references to the principal bibliography of the subject. 8°. Wilkes-Barre, Pa. 1883. 21 pp. Publ. Wyom. hist. geol. soc., No. 5.)

Catalogues forty genera and seventy-two species.

Lafontaine, Jules de. See **Borre**, A. P. de.

McLachlan, R. See **Gab es** schon u. s. w.

Matthew, George F. On some remarkable organisms of the Silurian and Devonian rocks in southern New Brunswick. (Trans. roy. soc. Canada, 1888, sect. iv: 49–62, pl. 4.) 4°. Montreal. 1889.

Describes the wing of Geroneura wilsoni from the Devonian of Lancaster, and a supposed larva, Archæoscolex, from the Devonian of St. John; a short section on the "Geological age of the insect remains" refers them to the middle Devonian.

Meek, Fielding Bradford, and **Worthen**, Amos Henry. Preliminary notice of a scorpion, a Eurypterus, and other fossils, from the coal-measures of Illinois. (Amer. journ. sc. arts, [2], 46: 19–28.) 8°. New Haven. 1868.

Afterwards described more fully in the Geological survey of Illinois. Among the "other fossils" are two myriapods.

——— ——— Articulate fossils of the coal measures. (Worthen, Geol. surv. Ill., 3, ii, Palæontology, pp. 540–565, figs.) 8°. [Springfield.] 1868.

Describe and figure, pp. 556–565, two myriapods and two arachnids, with a Note on the genus Palæocampa, p. 565, first described as a caterpillar, but here considered a worm.

Miller, Samuel Almond. The American palæozoic fossils: a catalogue of the genera and species, with names of authors, dates, places of publication, groups of rocks in which found, and the etymology and signification of the words, and an introduction devoted to the stratigraphical geology of the palæozoic rocks. 8°. Cincinnati. 1877. pp. 15, 253.

Arachnida, Myriapoda, and Insecta. pp. 224–226.

——— North American geology and palæontology for the use of amateurs, students, and scientists. 8°. Cincinnati. 1889. pp. 664, figs. 1194.

The Arachnida occupy pp. 569–571 with 3 figures; the Myriapoda pp. 572–574 with 6 figs.; and the Insecta pp. 574–581 with 23 figures, not all rightly named. Only paleozoic species are considered and it is not complete for those.

Morris, William. Did flowers exist during the Carboniferous epoch? (Nature, 20: 404.) 8°. London. 1879.

Notices a "carbonaceous impress on a piece of shale from the Slievardagh coal field, Tipperary," which "appears" to him "to be a butterfly."

Murchison, R. I. The Silurian system, founded on geological researches in the counties of Salop, Hereford, Radnor, Montgomery, Caermarthen, Brecon, Pembroke, Monmouth, Gloucester, Worcester, and Stafford; with descriptions of the coal fields and overlying formations. 4°. London. 1839. pp. 32, 768, pl. 37.

——— Siluria. The history of the oldest known rocks containing organic remains, with a brief sketch of the distribution of gold over the earth. 8°. London. 1854. pp. 16, 523, pl. 37.

Notices insects of the coal, p. 284.

——— Siluria. The history of the oldest fossiliferous rocks and their foundations; with a brief sketch of the distribution of gold over the earth. 3d edition (including the Silurian system) with maps and many additional illustrations. 8°. London. 1859. pp. 20, 592, (2), pl. (2), 41, maps 2.

Brief reference to and figure of an insect "allied to Corydalis" from Coalbrookdale on pp. 320–321.

Noeggerath, Jacob. Die insecten der steinkohlenflora. (Frankf. convers.-blatt, 1854: 215–216, 223.) 4°. Frankfurt a. M. 1854. (Kölnische zeitung, 1854.)

Not seen; quoted from Hagen's Bibliography.

Oldest (The) air breathers. (Pop. sc. monthl., 27: 395–400, 5 figs.) 8°. New York. 1885.

Popular account of Palæophonus and Palæoblattina, with extracts from the original accounts.

Ormerod, H. M. [Discussion of Stirrup's translation of Brongniart's paper.] (Trans. geol. soc. Manch., 18: 289, 291, 328.) 8°. Manchester. 1885, 1886.

The Commentry insects are preserved beside leaves.

Pike, J. W. Preservation of fossil insects and plants on Mazon Creek. 8°. Salem. 1881. pp. 5. (Proc. Amer. assoc. adv. sc., 29: 520–524.) 8°. Salem. 1881.

A sketch of the history of the formations at Mazon Creek, with a mention in most general terms of the animals and plants.

Plateau, Félix. See **Borre,** A. P. de.

Prestwich, Joseph. On some of the faults which affect the coalfield of Coalbrookdale. (Lond. Edinb. phil. mag., 4: 375–376.) 8°. London. 1834. (Proc. geol. soc. Lond., 2: 18–20.) 8°. London. 1834.

In a notice of the fossils a beetle and a spider are mentioned, p. 376 (20), as occurring in the iron-stone nodules at that place.

——— On the geology of Coalbrook Dale. (Trans. geol. soc. Lond., (2), 5: 413–495, pl. 30–41.) 4°. London. 1840.

Contains a notice, p. 416, of three fossil insects (Curculioides [sic] ansticii, C. prestvicii, and a neuropteron) from the locality; also entered in the table on p. 490.

Scudder, S. H. [Notice of fossil insects from the Devonian rocks of New Brunswick, and on Haplophlebium barnesii.] (Proc. Bost. soc. nat. hist., 11: 150–151.) 8°. Boston. 1867. (Amer. nat., 1: 445–446.) 8°. Salem. 1867.

Refers the Devonian insects to new families of Neuroptera and the Carboniferous Haplophlebium probably to the Ephemeridæ.

——— [Remarks on two new fossil insects from the Carboniferous formation in America.] (Proc. Bost. soc. nat. hist. 11: 301–403.) 8°. Boston. 1868. (Scudder, Entom. notes, 1: 7–9.) 8°. Boston. 1868. (Amer. journ. sc., (2), 46. 419–421.) 8°. New Haven. 1868.

Describes Megathentomum pustulatum and Archegogryllus priscus. Abstract in Amer. nat., 2: 390. 8°. Salem. 1869.

Scudder, S. H.—Continued.

——— Entomological notes. I. 8°. [Boston. 1868.] pp. 11.

Reprint of the preceding paper, with others.

——— Descriptions of fossil insects, found on Mazon Creek and near Morris, Grundy Co., Illinois. (Worthen, Geol. surv. Ill., 3: 566–572, figs. 1–10.) 8°. [Springfield.] 1868.

Describes nine new Carboniferous insects, mostly neuropteroid. It is also marked as a Supplement to Descriptions of Articulates.

——— Remarks on some remains of insects occurring in Carboniferous shale at Cape Breton. (Proc. Bost. soc. nat. hist., 18: 113–114.) 8°. Boston. 1875. (Scudder, Ent. notes, 5: 2–3.) 8°. Boston. 1876.

Notices the discovery of cockroach wings and the larva of a supposed dragon-fly at Sidney.

——— New and interesting insects from the Carboniferous of Cape Breton. 8°. Salem. 1876. pp. 2, figs. (Proc. Amer. assoc. adv. sc., 24: B, 110–111, figs. 1–2.) 8°. Salem. 1876.

Description of the cockroach and supposed larval dragon-fly mentioned in a preceding paper.

REPRINT: 8°. Montreal. 1876. pp. 2, figs. (Can. nat., (n. s.), 8: 88–90, figs. 1–2.) 8°. Montreal. 1876.

——— Fossil palæozoic insects, with a list of described American insects from the Carboniferous formation. (Geol. mag., (n. s.), dec. 2, vol. 3, pp. 519–520.) 8°. London. 1876.

Gives a list of thirty species. Entitled in table: On fossil insects from the coal measures.

——— On the close affiliation of the insects of Europe and America in the Carboniferous epoch. (Proc. Bost. soc. nat. hist., 18: 358–359.) 8°. Boston. 1876.

As intimately related as now.

——— Entomological notes, VI. 8°. Boston. 1878. pp. 55, pl.

Reprint, among other matter, of three short papers on fossil insects elsewhere mentioned.

——— The early types of insects; or the origin and sequence of insect life in palæozoic times (Mem. Bost. soc. nat. hist., 3: 13–21.) 4°. Boston. 1879.

Forms pp. 33–41 of the Fossil insects of North America, vol. 1.

A general review of paleozoic insects, attempting to show "that the laws of succession of the insect tribes are quite similar to those which have long been known to hold in other groups of the

Scudder, S. H.—Continued.
animal kingdom; and that the facts are, in the main, such as the theory of descent demands." The general conclusions are summarized under twelve heads. It is noticed and criticized by de Borre (Compt. rend. soc. ent. Belg., (2), no. 65, p. 11.) 8°. Bruxelles. 1879.

TRANSLATION: Les premiers types d'insectes; origine et ordre de succession des insectes dans la période paléozoïque. (Arch. sc. phys. nat., (3), 3: 353–371.) 8°. Genève. 1880.

The translation is by A. Humbert. Some notes, especially the bibliographical, are omitted.

ABSTRACT: The early types of insects. Abstract of a paper read before the National Academy of Sciences, Nov. 5, 1878. (Amer. journ. sc. arts, (3), 17: 72–74.) 8°. New Haven. 1879. (Science news, 1: 22–23.) 8°. Salem. 1878.

This contains the general conclusions.

TRANSLATION: Urtypen der insecten. (Kosmos, 5: 61–62.) 8°. Leipzig. 1879.

A translation of the abstract, with notes by the editor.

——— Two new British Carboniferous insects, with remarks on those already known. (Geol. mag., (2), 8: 293–300, fig.) 8°. London. 1881.

The only two hexapods hitherto known (excepting a cockroach) are Neuroptera and not Orthoptera as had been recently maintained. Two new species are described, Archæoptilus ingens, the largest paleozoic insect known, and Brodia priscotincta, remarkable for the preservation of the colored bands of the wing. Separates (without change of pagination) bear on the cover the title: New Carboniferous insects.

ABSTRACT: Upon the Carboniferous insects of Great Britain. (Harv. univ. bull., 2: 175.) 4°. Cambridge. 1881.

——— The Carboniferous hexapod insects of Great Britain. (Mem. Bost. soc. nat. hist., 3: 213–224, pl. 12.) 4°. Boston. 1883.

Forms vol. 1, pp. 235–246, pl. 11, of the Fossil insects of North America.

Brodia, Archæoptilus and Lithosialis are described at length; a list of 7 species is given.

——— On additional remains of articulates obtained by Dr. Dawson from sigillarian stumps in the coal field of Nova Scotia. (Phil. trans., 1882: 649–650.) 4°. London. 1883.

Notices some new myriapods and scorpions without giving names.

Scudder, S. H.—Continued.

——— Palæodictyoptera: or the affinities and classification of paleozoic Hexapoda. (Mem. Bost. soc. nat. hist., 3: 319–351, pl. 29–32.) 4°. Boston. 1885.

Forms vol. 1, pp. 283–315, pl. 15–18, of the Fossil insects of North America.

The winged insects of paleozoic times are grouped under the terms orthopteroid, neuropteroid and hemipteroid Palæodictyoptera, and separated into several families. A large number of new genera and species are described and figured from American rocks.

——— Winged insects from a paleontological point of view, or The geological history of insects. (Mem. Bost. soc. nat. hist., 3: 353–358.) 4°. Boston. 1885.

Forms vol. 1, pp. 317–322, of the Fossil insects of North America.

The division of insects into two great groups, Metabola and Heterometabola, is urged upon new grounds; but ordinal features were not differentiated in the earliest period. "Insects continued through paleozoic time as a generalized form of Heterometabola . . . which had the front wings as well as the hind wings membranous. On the advent of mesozoic times a great differentiation took place, and before its middle all of the orders [of insects] . . . were fully developed in all their essential features as they exist today."

——— Two more English Carboniferous insects. (Geol. mag., (3), 2: 265–266.) 8°. London. 1885.

Brodia priscotincta and Archæoptilus ingens described.

——— See also **Borre**, A. P. de, **Brauer**, F., **Dawson**, J. W.

Selys-Longchamps, M. E. de. See **Borre**, A. P. de.

Sterzel, J. T. Ueber zwei neue insektenarten aus dem karbon von Lugau. (Ber. naturw. gesellsch. Chemnitz, 7: 271–276, pl.) 8°. Chemnitz. 1881.

Describes and figures Blattina (Etoblattina) lanceolata and Termes (Mixotermes?) lugauensis.

Stirrup, Mark. [Discussion of Brongniart's paper.] (Trans. geol. soc. Manch., 18: 267–269, 289, 292, 329–331.) 8°. Manchester. 1885, 1886.

Explanation of the conditions under which insects were found at Commentry; the excellence of their preservation; perforations in fossil woods in Lancashire.

——— See also **Brongniart**, C. J. E.

Verneuil, Philippe Édouard Poulletier de. See **Archiac**, **E. J. A. V. d', et Verneuil**, **P. É. P. de.**

Voigt [C. G.?] Neueste acquisitionen des Halle'schen mineralogischen museums. (Ber. naturw. ver. Harzes, 1840–46 (2e aufl.), p. 26.) 4°. Wernigerode. 1856.

Exhibition of four species of Blattina from Wettin and Löbejun, and of an insect to be called Acridites carbonatus by Germar; these were afterwards described by Germar in Münster's Beiträge.

Wallace, A. R. See **Gab es** schon u. s. w.

Watts, William. [Discussion of Stirrup's translation of Brongniart's paper.] (Trans. geol. soc. Manch., 18: 291.) 8°. Manchester. 1885.

Discusses the amphibious nature of the Commentry fossils.

Wild, George. [Discussion of Stirrup's translation of Brongniart's paper.] (Trans. geol. soc. Manch., 18: 290, 291.) 8°. Manchester. 1885.

Expresses his belief that there were insects in Carboniferous times; fossils from Oldham show insect borings.

Woodward, H. Notes on some fossil crustacea, and a chilognathous myriapod, from the coal measures of the west of Scotland. (Trans. geol. soc. Glasgow, 2: 234–248, pl. 3.) 8°. Glasgow. 1867.

Describes a Xylobius on pp. 235–237, and enumerates the true insects from the coal formation on pp. 237–240.

ABSTRACT: Notes on a chilognathous myriapod and some fossil crustacea from the coal measures of the west of Scotland. (Geol. mag., 4: 130–131.) 8°. London. 1867.

——— On some supposed fossil remains of Arachnida (?) and Myriopoda from the English coal-measures. (Geol. mag., 10: 104–112, figs.) 8°. London. 1873.

Separate also entitled: On British fossil arthropoda. 8°. London. 1873. pp. 9, figs. 11. Discusses the affinities of "Eurypterus? (Euphoberia) ferox," referring it to the myriapods.

Worthen, Amos Henry. See **Meek,** F. B., and **Worthen,** A. H.

III.—SPECIAL FOR PALEOZOIC TIME.

IIIa.—Paleozoic Myriapoda.

* * * See also under Sections I and II.

Borre, A. P. de. Sur un travail récent de M. S. H. Scudder concernant les myriapodes du terrain houiller. 8°. Bruxelles. 1882. pp. 3. (Comptes rend. soc. entom. belg., (3), xix: 103–105.) 8°. Bruxelles. 1882.

An analysis of his Archipolypoda, also entitled: Analyse d'un mémoire... sur les archipolypodes, nouvel ordre de myriapodes fossiles.

——— Tentamen catalogi Lysiopetalidarum, Julidarum, Archiulidarum, Polyzonidarum atque Siphonophoridarum hucusque descriptarum. 8°. Bruxelles. 1884. pp. 41. (Ann. soc. entom. Belg., 28: 46–82.) 8°. Bruxelles. 1884.

Six fossil species of Archiulidæ are catalogued on p. 38 (79).

Dawson, J. W. On a terrestrial mollusk, a chilognathous myriapod and some new species of reptiles from the coal formation of Nova Scotia. (Quart. journ. geol. soc. Lond., 16, i: 268–277, figs. 1–29.) 8°. London. 1859.

Describes and figures Xylobius sigillariæ.

——— The air breathers of the coal period in Nova Scotia. (Can. nat. geol., 8: 1–12, 81–92, 159–175, 268–295, pl. 1–6.) 8°. Montreal. 1863.

Same as the following.

——— Air breathers of the coal period: a descriptive account of the remains of land animals found in the coal formation of Nova Scotia, with remarks on their bearing on theories of the formation of coal and of the origin of species, with illustrations. 8°. Montreal. 1863. t. p., front., pp. 4, 81, pl. 6, and a plate of photogr.

Contains, section xii, Invertebrate air breathers, pp. 62–63, and pl. 6 (pars) which describes Xylobius sigillariæ. See also p. 67.

Dohrn, A. Julus brassi n. sp. ein myriapode aus der steinkohlenformation

Scudder, S. H.—Continued.

animal kingdom; and that the facts are, in the main, such as the theory of descent demands." The general conclusions are summarized under twelve heads. It is noticed and criticized by de Borre (Compt. rend. soc. ent. Belg., (2), no. 65, p. 11.) 8°. Bruxelles. 1879.

TRANSLATION: Les premiers types d'insectes; origine et ordre de succession des insectes dans la période paléozoïque. (Arch. sc. phys. nat., (3), 3: 353–371.) 8°. Genève. 1880.

The translation is by A. Humbert. Some notes, especially the bibliographical, are omitted.

ABSTRACT: The early types of insects. Abstract of a paper read before the National Academy of Sciences, Nov. 5, 1878. (Amer. journ. sc. arts, (3), 17: 72–74.) 8°. New Haven. 1879. (Science news, 1: 22–23.) 8°. Salem. 1878.

This contains the general conclusions.

TRANSLATION: Urtypen der insecten. (Kosmos, 5: 61–62.) 8°. Leipzig. 1879.

A translation of the abstract, with notes by the editor.

——— Two new British Carboniferous insects, with remarks on those already known. (Geol. mag., (2), 8: 293–300, fig.) 8°. London. 1881.

The only two hexapods hitherto known (excepting a cockroach) are Neuroptera and not Orthoptera as had been recently maintained. Two new species are described, Archæoptilus ingens, the largest paleozoic insect known, and Brodia priscotincta, remarkable for the preservation of the colored bands of the wing. Separates (without change of pagination) bear on the cover the title: New Carboniferous insects.

ABSTRACT: Upon the Carboniferous insects of Great Britain. (Harv. univ. bull., 2: 175.) 4°. Cambridge. 1881.

——— The Carboniferous hexapod insects of Great Britain. (Mem. Bost. soc. nat. hist., 3: 213–224, pl. 12.) 4°. Boston. 1883.

Forms vol. 1, pp. 235–246, pl. 11, of the Fossil insects of North America.

Brodia, Archæoptilus and Lithosialis are described at length; a list of 7 species is given.

——— On additional remains of articulates obtained by Dr. Dawson from sigillarian stumps in the coal field of Nova Scotia. (Phil. trans., 1882: 649–650.) 4°. London. 1883.

Notices some new myriapods and scorpions without giving names.

Scudder, S. H.—Continued.

——— Palæodictyoptera: or the affinities and classification of paleozoic Hexapoda. (Mem. Bost. soc. nat. hist., 3: 319–351, pl. 29–32.) 4°. Boston. 1885.

Forms vol. 1, pp. 283–315, pl. 15–18, of the Fossil insects of North America.

The winged insects of paleozoic times are grouped under the terms orthopteroid, neuropteroid and hemipteroid Palæodictyoptera, and separated into several families. A large number of new genera and species are described and figured from American rocks.

——— Winged insects from a paleontological point of view, or The geological history of insects. (Mem. Bost. soc. nat. hist., 3: 353–358.) 4°. Boston. 1885.

Forms vol. 1, pp. 317–322, of the Fossil insects of North America.

The division of insects into two great groups, Metabola and Heterometabola, is urged upon new grounds; but ordinal features were not differentiated in the earliest period. "Insects continued through paleozoic time as a generalized form of Heterometabola . . . which had the front wings as well as the hind wings membranous. On the advent of mesozoic times a great differentiation took place, and before its middle all of the orders [of insects] . . . were fully developed in all their essential features as they exist today."

——— Two more English Carboniferous insects. (Geol. mag., (3), 2: 265–266.) 8°. London. 1885.

Brodia priscotincta and Archæoptilus ingens described.

——— See also **Borre**, A. P. de, **Brauer**, F., **Dawson**, J. W.

Selys-Longchamps, M. E. de. See **Borre**, A. P. de.

Sterzel, J. T. Ueber zwei neue insektenarten aus dem karbon von Lugau. (Ber. naturw. gesellsch. Chemnitz, 7: 271–276, pl.) 8°. Chemnitz. 1881.

Describes and figures Blattina (Etoblattina) lanceolata and Termes (Mixotermes?) lugauensis.

Stirrup, Mark. [Discussion of Brongniart's paper.] (Trans. geol. soc. Manch., 18: 267–269, 289, 292, 329–331.) 8°. Manchester. 1885, 1886.

Explanation of the conditions under which insects were found at Commentry; the excellence of their preservation; perforations in fossil woods in Lancashire.

——— See also **Brongniart**, C. J. E.

Verneuil, Philippe Édouard Poulletier de. See **Archiac**, E. J. A. V. d', et **Verneuil**, P. É. P. de.

Voigt [C. G.?] Neueste acquisitionen des Halle'schen mineralogischen museums. (Ber. naturw. ver. Harzes, 1840–46 (2e aufl.), p. 26.) 4°. Wernigerode. 1856.

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Woodward, H.—Continued.

Describes a Xylobius on pp. 235–237, and enumerates the true insects from the coal formation on pp. 237–240.

ABSTRACT: Notes on a chilognathous myriapod and some fossil crustacea from the coal measures of the west of Scotland. (Geol. mag., 4: 130–131.) 8°. London. 1867.

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Worthen, Amos Henry. See **Meek**, F. B., and **Worthen**, A. H.

III.—SPECIAL FOR PALEOZOIC TIME.

IIIa.—Paleozoic Myriapoda.

. See also under Sections I and II.

Borre, A. P. de. Sur un travail récent de M. S. H. Scudder concernant les myriapodes du terrain houiller. 8°. Bruxelles. 1882. pp. 3. (Comptes rend. soc. entom. belg., (3), xix: 103–105.) 8°. Bruxelles. 1882.

An analysis of his Archipolypoda, also entitled: Analyse d'un mémoire. . . sur les archipolypodes, nouvel ordre de myriapodes fossiles.

——— Tentamen catalogi Lysiopetalidarum, Julidarum, Archiulidarum, Polyzonidarum atque Siphonophoridarum hucusque descriptarum. 8°. Bruxelles. 1884. pp. 41. (Ann. soc. entom. Belg., 28: 46–82.) 8°. Bruxelles. 1884.

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Dawson, J. W.—Continued.

Describes and figures Xylobius sigillariæ.

——— The air breathers of the coal period in Nova Scotia. (Can. nat. geol., 8: 1–12, 81–92, 159–175, 268–295, pl. 1–6.) 8°. Montreal. 1863.

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——— Air breathers of the coal period: a descriptive account of the remains of land animals found in the coal formation of Nova Scotia, with remarks on their bearing on theories of the formation of coal and of the origin of species, with illustrations. 8°. Montreal. 1863. t. p., front., pp. 4, 81, pl. 6, and a plate of photogr.

Contains, section xii, Invertebrate air breathers, pp. 62–63, and pl. 6 (pars) which describes Xylobius sigillariæ. See also p. 67.

Dohrn, A. Julus brassi n. sp. ein myriapode aus der steinkohlenformation

Dohrn, A.—Continued.
(with note by Weiss). (Verhandl. naturh. ver. preuss. Rheinl. u. Westph., (3), 5: 335–336, pl. 6.) 8°. Bonn. 1868.

Description of a species from Lebach with memoranda of previously described species. The note by Weiss is purely geological, on the probable equivalence of the Lebach beds and those yielding Xylobius.

Geinitz, H. B. Paläontologische mittheilungen aus dem mineralogischen museum in Dresden. (Sitzungsb. naturw. gesellsch. Isis, 1872: 125–131, taf. 1.) 8°. Dresden. 1872.

Contains, pp. 128–131, taf. 1, fig. 4–7: iii. Fossile myriapoden in dem rothliegenden bei Chemnitz. Palæojulus dyadicus is described.

——— Ueber Palæojulus dyadicus. (Neues jahrb. f. miner., 1878: 733.) 8°. Stuttgart. 1878.

In response to Sterzel, defends the myriapodan character of Palæojulus. The identity of his Palæojulus with Scolecopteris elegans Zenk. is acknowledged by the author in 1880. See his Nachträge zur Dyas, I. (Mitth. k. min. geol. prähist. mus. Dresden, heft. 3: 1–4). 4°. Cassel. 1880. See also Sterzel, J. T.

Heathcote, F. G. The post-embryonic development of Julus terrestris. (Phil. trans. roy. soc. Lond., 179, B: 157–179, pls. 27–30.) 4°. London. 1889.

Heathcote points out that the relations of the dorsal and ventral regions of the body of the young Julus correspond exactly with their permanent condition in Euphoberia, a Carboniferous myriapod; and he further holds that the traces of the division of the dorsal plates found in the Archipolypoda lend additional strength to the belief that they are composed in modern diplopods of two fused segments originally distinct; which the doubling of the internal organs and of the mesoblastic segmentation also indicates.

ABSTRACT: (Proc. roy. soc. Lond., 43: 243–245.) 8°. London. 1888

Latzel, Robert. Die myriopoden der österreichisch-ungarischen monarchie. 2 v. 8°. Wien. 1880, 1884. Vol. 1, pp. 15, 228, pl. 10; vol. 2, pp. 12, 414, pl. 16.

Contains Einiges über fossile myriopoden, vol. 2, pp. 364–366. Based on Scudder's memoir on the Archipolypoda, followed by a list of fossil genera.

Meek, F. B., and **Worthen**, A. H. Notice of some new types of organic remains from the coal measures of Illinois. (Proc. acad. nat. sc. Philad., 1865; 41–53.) 8°. Philadelphia. 1865.

Meek, F. B., and **Worthen**, A. H.—Continued.

Describe Anthracerpes typus as a myriapod and Palæocampa anthrax as a lepidopterous larva, both afterwards considered by them as worms. See also Worthen, A. H.

Packard, A. S. The systematic position of the Archipolypoda, a group of fossil myriopods. (Amer. nat., 17: 326–329, figs.) 8°. Philadelphia. 1883.

Considers that these Carboniferous myriapods should not be separated from the Chilognatha, but that they should form a group under the Chilognatha distinct from modern types.

——— On the morphology of the Myriopoda. (Proc. Amer. phil. soc., 21: 197–209, figs.) 8°. Philadelphia. 1883.

At the close discusses the probable affinities of Palæocampa, which he regards as probably a neuropterous larva.

Page, David. Advanced text book of geology, descriptive and industrial. 12°. Edinburgh. 1860. pp. 10, 326, figs.

On p. 135 figures Kampecaris.

Peach, Benjamin N. On some fossil myriapods from the lower old red sandstone of Forfarshire. 8°. Edinburgh. 1882. 11 pp., pl. (Proc. roy. phys. soc. Edinb., 7: 177–188, pl. 2.) 8°. Edinburgh. 1882.

Describes the genera Kampecaris and Archidesmus with one species of each.

Salter, John William. On some species of Eurypterus and allied forms. (Quart. journ. geol. soc. Lond., 19, i: 81–87, figs.) 8°. London. 1863.

Describes and figures as a Eurypterus some Carboniferous fragments since recognized as myriapods.

Scudder, S. H. On the fossil myriapods of the coal formations of Nova Scotia and England. (Quart. journ. geol. soc. Lond., 25, i: 441.) 8°. London. 1869.

Briefest abstract of the next paper published four years later.

——— On the Carboniferous myriapods preserved in the sigillarian stumps of Nova Scotia. (Mem. Bost. soc. nat. hist., 2: 231–239.) 4°. Boston. 1873.

Forms pp. 21–29 of the Fossil insects of North America, vol. 1.

Describes two genera and several species besides the Xylobius sigillariæ of Dawson Abstract in Amer. journ. sc., (3), 6: 225–226. 8°. N. Haven. 1873.

——— Supplementary note on fossil myriapods. 4°. Boston. 1878. p. 1, figs. (Mem. Bost. soc. nat. hist., 2: 561–562, figs.) 4°. Boston. 1878.

Scudder, S. H.—Continued.

Forms p. 31 of the Fossil insects of North America, vol. 1. Description of figures of the different species, omitted from the preceding paper.

——— The structure and affinities of Euphoberia Meek and Worthen, a genus of Carboniferous myriapoda. (Amer. journ. sc. arts, (3), 21: 182–186.) 8°. New Haven. 1881.

Points out the distinction between the Carboniferous and modern diplopodous myriapods, and proposes a distinct suborder, Archipolypoda, for the former.

——— [Exhibition of Carboniferous centipedes.] (Proc. Bost. soc. nat. hist., 21: 82.) 8°. Boston. 1881.

Archipolypoda from Illinois.

——— Remarks on remarkable Carboniferous millipedes. (Proc. Bost. soc. nat. hist., 21: 122.) 8°. Boston. 1881.

They form a distinct suborder.

——— Archipolypoda, a subordinal type of spined myriapods from the Carboniferous formation. (Mem. Bost. soc. nat. hist., 3: 143–182, pl. 10–13.) 4°. Boston. 1882.

Forms vol. 1, pp. 195–234, pl. 7ª, 8–10, of the Fossil insects of North America.

Discusses their relation to modern diplopods and monographs the known species, adding several new ones; twelve species are recognized, divided into four genera. The first plate contains a restoration of the largest species with other animals and plants of Mazon Creek. See also Borre, A. P. de.

——— The affinities of Palæocampa Meek and Worthen, as evidence of the wide diversity of type in the earliest known myriapods. (Amer. journ. sc., (3), 24: 161–170.) 8°. New Haven. 1882.

Critical examination of the structure of Palæocampa formerly regarded as a lepidopterous larva or a worm, to show that it must be referred to the myriapods, but form an independent group therein.

——— Two new and diverse types of Carboniferous myriapods. (Mem. Bost. soc. nat. hist., 3: 283–297, pl. 26, 27, figs. 1–4.) 4°. Boston. 1884.

Forms vol. 1, pp. 247–261, pl. 12–13, of the Fossil insects of North America.

Trichiulus (afterwards discovered to be a folded fern-leaf), with three species, is described, and Palæocampa, whose structure is described at length, is classed with myriapods as a new suborder, Protosyngnatha.

——— Note on the supposed myriapodan genus Trichiulus. (Mem. Bost. soc. nat. hist., 3: 438.) 4°. Boston. 1886.

Scudder, S. H.—Continued.

Forms part of p. 330, vol. 1, of the Fossil insects of North America.

Trichiulus proves to be the tip of an unfolding fern-leaf.

——— New Carboniferous myriapoda from Illinois. (Mem. Bost. soc. nat. hist., 4: 417–442, pl. 33–38.) 4°. Boston. 1890.

Forms pp. 393–418, pl. 25–30, of the Fossil Insects of North America, vol. 1.

Sixteen species are described and three genera, besides notes on five species previously known.

——— See also **Latzel, R.**

Sterzel, J. T. Ueber Palæojulus dyadicus. (Neues jahrb. miner., 1878: 729–731.) 8°. Stuttgart. 1878.

Considers the fossil described by Geinitz as a myriapod to be a fern-leaf, of a species of Scolecopteris.

——— Ueber Palaeojulus dyadicus Geinitz und Scolecopteris elegans Zenker. (Zeitschr. deutsch. geol. gesellsch., 30: 417–426, taf. 19.) 8°. Berlin. 1878.

Mainly devoted to showing that no animal remains have been found which possess the characters assigned to Palæojulus dyadicus; but this so-called myriapod is the half of a leaf of Scolecopteris elegans, a fern.

——— Ueber Scolecopteris elegans Zenker und andere fossile reste aus dem hornstein von Altendorf bei Chemnitz. (Zeitschr. deutsch. geol. gesellsch., 32: 1–18, taf. 1–2.) 8°. Berlin. 1880.

Has a brief reference to Palæojulus dyadicus on pp. 1–2.

Weiss, Christian Ernst. See **Dohrn, A.**

Westwood, John Obadiah. Sur une empreinte trouvée en Angleterre dans les schistes houillers et supposée pouvoir être celle d'une chenille. (Compt. rend. soc. ent. Belg., (2), xxii: 6–7.) 8°. Bruxelles. 1876. (Ann. soc. ent. Belg., 19, Compt. rend., 4–5.) 8°. Bruxelles. 1876.

Translation by Weyers of a passage of Westwood's from Brodie's work on the secondary insects of England, in which a supposed caterpillar (since recognized as a myriapod) is described. Weyers adds a few comments.

Weyers, Joseph Leopold. See **Westwood, J. O.**

Woodward, H. A monograph of the British fossil Crustacea belonging to the order Merostomata. 4°. London. 1866–1878. t. p., pp. 2, 263, pl. 36. ([Publ.] paleontogr. soc., 1866–78.)

Woodward, H.—Continued.

Includes, pp. 171-174, in part iv (1872), Eurypterus (Euphoberia) ferox, since held by Woodward and others to be a myriapod.

——— On Euphoberia brownii H. Woodw., a new species of myriapod from the coal-measures of the west of Scotland. (Geol. mag., 8: 102-104, pl. 3, figs. 6-7.) 8°. London. 1871.

Describes and compares with E. armigera of the Illinois Carboniferous beds.

——— On some spined myriapods from the Carboniferous series of England. (Geol. mag., n. s., dec. 3, vol. 4: 1-10, figs., pl. 1.) 8°. London. 1887.

Separate under the title: Myriapods of the coal period. Gives a historical summary of published data concerning Carboniferous myriapods and discusses at length with the aid of figures the structure of Euphoberia ferox.

——— Supplementary note on Euphoberia ferox. (Geol. mag., n. s., dec. 3, vol. 4: 116-117, figs.) 8°. London. 1887.

The illustration in Brodie's work is faulty, so that E. ferox can not be referred to Acantherpestes.

Worthen, A. H. Geological survey of Illinois. Vol. 2. Palæontology. 8°. [Springfield] 1866. pp. 22, 6, (2), 11-470, 8 pl. 50.

In Section II, Descriptions of invertebrates from the carboniferous system by F. B. Meek and A. H. Worthen, occur on pp. 409-411 descriptions of Anthracerpes, a supposed myriapod, and Palæocampa, regarded as a caterpillar, but since shown to be a myriapod. Both are figured on pl. 32.

——— See **Meek**, F. B., and **Worthen**, A. H.

IIIb.—Paleozoic Arachnida.

⁂ See also under Sections I and II.

Beecher, Charles E. Note on the fossil spider Arthrolycosa antiqua Harger. (Amer. journ. sc., (3), 38: 219-223, 3 figs.) 8°. New Haven. 1889.

"It seems necessary to exclude the genus from the order Anthracomarti, and at present a strict interpretation of any of the orders will not admit this form."

Beneden, Édouard van. De la place que les limules doivent occuper dans la classification des arthropodes. (Comptes rend. séances soc. ent. Belg., 1871-72: 9-11.) 8°. Bruxelles. 1871. (Ann. soc. ent. Belg., 15, compte rend., 9-11.) 8°. Bruxelles. 1872.

Beneden, É. van—Continued.

TRANSLATION: On the systematic position of the king crabs and trilobites. (Ann. mag. nat. hist., (4), 9: 98-99.) 8°. London. 1872.

Concludes from a study of the embryonic development of Limulus that it presents the greatest analogy to that of scorpions and other arachnids from which the king crabs can not be separated. "The Trilobites as well as the Eurypterida and the Pœcilopoda must be separated from the class Crustacea, and form, with the Scorpionida and the other Arachnida, a distinct branch, the origin of which has still to be ascertained."

Brongniart, C. J. E. Palæophoneus nuncius. (Bull. d. séances soc. ent. France, 1884: 226.) 8°. Paris. 1884.

Brief notice.

Corda, August Karl Joseph. Ueber den in der steinkohlenformation bei Chomle gefundenen fossile scorpion. (Verhandl. gesellsch. vaterl. mus. Böhm., vers. 13: 35-43, pl., figs. 1-14.) 8°. Prag. 1835.

Contains, *a*. Urtheil der commission bei der naturforscherversammlung in Stuttgart, pp. 35-36. *b*. Mikroskopische untersuchung, abbildung und beschreibung, von Corda, pp. 36-43, with a detailed description and discussion of the affinities of the scorpion.

——— Ueber eine fossile gattung der afterscorpione. (Verhandl. gesellsch. vaterl. mus. Böhm., vers. 17: 14-18, pl. 1, figs. 1-9.) 8°. Prag. 1839.

Description of Microlabis sternbergii. An abstract will be found in the Neues jahrb. f. miner., 1841: 854-855. 8°. Stuttgart. 1841.

Feistmantel, Karl. Die steinkohlen becken in der umgebung von Radnic. (Archiv naturw. landesdurchf. Böhmen, bd. 1, sect. 2, at end, pp. 1-120, pl. 1-2.) 8°. Prag. 1869.

Gives, p. 66, a brief account of the Chomle scorpions described by Corda, and notices the discovery of Palaranea borassifolia without description.

Geikie, Archibald. A recent find in British palæontology. (Nature, 25: 1-3.) 4°. London. 1881.

Contains an announcement of the discovery of remarkably perfect scorpions in the coal measures of Scotland, with some results of their study by Mr. B. N. Peach. An abstract entitled New Carboniferous fossils in Scotland, extracted from the London Times, will be found in Amer. nat., 15: 1021-1022. 8°. Philadelphia. 1881. See also Primeval Scottish scorpions.

Geinitz, H. B. Kreischeria wiedei H. B. Gein., ein fossiler pseudoscorpion aus der steinkohlenformation von

Geinitz, H. B.—Continued. Zwickau. (Zeitschr. deutsch. geol. gesellsch., 1882: 238–242, pl. 14.) 8°. Berlin. 1882.

Besides a full description and figures of both dorsal and ventral surface comparisons are made with Architarbus and other allied forms.

Goss, H. Further evidence of the existence of insects in the Silurian period. (Ent. monthl. mag., 21: 234.) 8°. London. 1885.

Mere reference to the discovery of the Scottish scorpion.

Harger, Oscar. Notice of a new fossil spider from the coal measures of Illinois. (Amer. journ. sc. arts, [3], 7: 219–223, fig.) 8°. New Haven. 1874.

Extended description of Arthrolycosa antiqua with discussion of its affinities.

Harvey, F. L. On Anthracomartus trilobitus Scudd. (Proc. acad. nat. sc. Philad., 1886: 231–232.) 8°. Philadelphia. 1886.

Note on the geological position with a brief description of the fossil.

Haughton, Samuel. Description of a fossil spider, Architarbus subovalis, from the middle coal measures, Burnley, Lancaster. (Journ. geol. soc. Ireland, n. s., 4: 222–223, figs.) 8°. Dublin, etc. 1877.

Gives a figure, without description, both of the original and of the new and better specimen.

Hunter, J. R. S. Notes on the discovery of a fossil scorpion (Palæophonus caledonicus) in the Silurian strata of Logan Water. (Trans. geol. soc. Glasg., 8: 169–170.) 8°. Glasgow. 1886.

Brief statement regarding the manner and place of discovery with nothing of paleontological importance.

——— Notes on a new fossil scorpion (Palæophonus caledonicus) from the upper Silurian shales, Logan Water, Lesmahagow. (Trans. Edinb. geol. soc., 5: 187–191, pl. 4.) 8°. Edinburgh. 1887.

Description with geological notes. Plate not published.

Karsch, F. Ueber ein neues spinnenthier aus der schlesischen steinkohle und die arachniden der steinkohlenformation überhaupt. (Zeitschr. deutsch. geol. gesellsch., 34: 556–561, pl. 21.) 8°. Berlin. 1882.

Describes Anthracomartus and makes the first essay at a classification of paleozoic Arachnida.

Kinnear, W. T. On the occurrence and range of beds containing scorpion remains in the Carboniferous rocks of Fife. (Trans. Edinb. geol. soc., 5: 216–220.) 8°. Edinburgh. 1887.

Wholly geological, except for notes on the condition of specimens found.

Koninck, Laurent Guillaume de. Sur une nouvelle espèce de crustacé du terrain houiller de la Belgique. (Bull. acad. roy. Belg., (2), 45: 409–410.) 16°. Bruxelles. 1878.

Introducing Woodward's communication on Brachypyge carbonis.

Kušta, J. Notiz über den fund eines arachnidenrestes im carbon bei Petrovic. 8°. Prag. 1882. 4 pp. (Sitzungsb. k. böhm. gesellsch. wiss., 1882: 258–261.) 8°. Prag. 1883.

A scorpion which he compares to Cyclophthalmus.

——— Anthracomartus krejčii, eine neue arachnide aus dem böhmischen carbon. 8°. Prag. 1883. 8 pp., pl. (Sitzungsb. k. bohm. gesellsch. wiss., 1883: 340–345, pl.) 8°. Prag. 1883.

Extended descriptions and comparisons.

———. Ein neuer fundort von Cyclophthalmus senior C. 8°. Prag. 1884. 3 pp. (Sitzungsb. k. böhm. gesellsch. wiss., 1884: 48–50.) 8°. Prag. 1884.

Description of a specimen found near Rakonitz.

——— Thelyphonus bohemicus n. sp. ein fossiler geisselscorpion aus der steinkohlenformation von Rakonitz. 8°. Prag. 1884. 8 pp., 2 pl. (Sitzungsb. k. böhm. gesellsch. wiss., 1884: 186–191, 2 pl. in 1.) 8°. Prag. 1884.

Describes at length and figures excellently the first known Carboniferous pedipalp.

——— Neue arachniden aus der steinkohlenformation von Rakonitz. 8°. Prag. 1885. 8 pp., pl. (Sitzungsb. k. böhm. gesellsch. wiss., 1884: 398–403, pl.) 8°. Prag. 1884.

Describes Rakovnicia and two species of Anthracomartus with additional remarks on Cyclophthalmus and Thelyphonus.

——— O nových arachnidech z karbonu Rakovnického. (Véstn. král. ceške společn. nauk, 1888: 192–208, pl.) 8°. Prag. 1888.

Describes Geralycosa, Scudderia, Eotarbus, a new Anthracomartus, three species of Geralinura and an Anthrascorpio. A German abstract is added, with a list of arthropods from Rakonitz.

Lankester, Edwin Ray. Limulus an arachnid. (Quart. journ. micr. sc., 21: 504–548, 609–649, pl. 28–29, figs.) 8°. London. 1881.

An extended argument to show, mainly on anatomical and morphological grounds, that the king crabs are not Crustacea but Arachnida. With the Trilobita and Eurypterina he considers the Xiphosura as the precursors of the higher Arachnida.

——— Studies in Apus, Limulus, and Scorpio. 8°. London. 1882. t. p., pp. 36 (2), t. p., 8, 8, (4), pl. (3), figs.

Contains the same as the preceding with another paper.

Lindström, G. Sur un scorpion du terrain silurien de Suède. (Comptes rendus, 99: 984–985.) 4°. Paris. 1884.

First announcement of Palæophonus.

——— Le plus ancien animal terrestre connu. (La nature, 13, i: 33–34, fig.) 8°. Paris. 1884.

Brief account of Palæophonus nuncius, based on a letter from Lindström to Milne Edwards, and accompanied by a woodcut.

——— List of the fossils of the upper Silurian formation of Gotland. 8°. Stockholm. 1885. 20 pp.

Palæophonus placed at the head of the list.

——— Preliminary notice on a Silurian scorpion (Palæophonus nuncius Thorell & Lindström), from the Isle of Gothland. (Trans. Edinb. geol. soc., 5: 184–186, pl. 3.) 8°. Edinburgh. 1887.

Brief description of the condition and organs of the specimen. The plate was not published.

——— See also **Thorell, T.**, and **Lindström, G.**

Meyer, C. E. H. von. Scorpion aus dem steinkohlengebirg. (Mus. senckenb., 1: 293.) 4°. Frankfurt a. M. 1834.

A simple notice of Sternberg's, or rather Corda's scorpion.

Mosely, H. N. See **Packard**, A. S.

Packard, A. S. Is Limulus an arachnid? (Amer. nat., 16: 287–292.) 8°. Philadelphia. 1882.

In answer to Lankester, attempts to prove that Limulus is a crustacean, chiefly from the discovery by Willemoes of a nauplius-stage in the development of an East Indian species; a discovery which he afterwards acknowledges to be false, p. 436. See, also, Moseley in Nature, 25: 582.

Peach, B. N. On some new species of fossil scorpions from the Carboniferous rocks of Scotland and the English borders, with a review of the genera Eoscorpius and Mazonia of Messrs. Meek and Worthen. (Trans. roy. soc. Edinb., 30: 397–412, pl. 22, 23.) 4°. Edinburgh. 1882.

Description and illustration of five distinct forms referred to Eoscorpius, with a characterization of the group.

——— Ancient air breathers. (Nature, 31: 295–298, 2 figs.) 8°. London. 1885.

General account of the Swedish and Scottish discoveries of Palæophonus, with figures of both.

——— See also **Geikie**, A.

Primæval Scottish scorpions. (The scotsman, no. 11960, p. 3.) f°. Edinburgh. 1881.

An anonymous communication, of more than a column in length, based on Geikie's article in Nature, with special reference to Peach's discoveries.

Reuss, A. E. Kurze übersicht der geognostischen verhältnisse Böhmens; fünf vorträge, gehalten im naturwissenschaftlichen vereine Lotos im jahre 1853; mit drei geologischen übersichtskarten. 8°. Prag. 1854. pp. 103, pl. 3.

Refers, p. 59, to two scorpions and a spider from the Carboniferous rocks of Bohemia.

Roemer, F. On a fossil spider lately discovered in the coal measures of Upper Silesia. (Report Brit. assoc. adv. sc., 1865, notices, 73.) 8°. London. 1866. (Geol. mag., 2: 468.) 8°. London. 1865.

These two are essentially the same, with slightly differing titles; and are practically an abstract of the following.

——— Protolycosa anthracophila, eine fossile spinne aus dem steinkohlen-gebirge Oberschlesiens. (Neues jahrb. f. mineral., 1866: 136–143, taf. 3.) 8°. Stuttgart. 1866.

Describes at length and figures Protolycosa anthracophila.

——— Auffindung und vorlegung eines neuen gliederthieres in dem steinkohlengebirge der Ferdinandsgrube bei Glatz. (Jahresb. schles. gesellsch. vaterl. cultur, 56: 54–55.) 8°. Breslau. 1879.

Describes Architarbus silesiacus.

Scudder, S. H. A contribution to our knowledge of paleozoic Arachnida. (Proc. Amer. acad. arts sc., 20: 13–22.) 8°. Boston. 1884.

A systematic revision of the known forms, with descriptions of many new genera and species.

Scudder, S. H.—Continued.

——— Note on Anthracomartus carbonis. 8°. Bruxelles. 1885. 2 pp., fig. (Compte rendu soc. ent. Belg., (3), lxii: 84–85, fig.) 8°. Bruxelles. 1885.

Woodward's Brachypyge carbonis is not a crustacean but an arachnid.

——— Illustrations of the carboniferous Arachnida of North America of the orders Anthracomarti and Pedipalpi. (Mem. Bost. soc nat. hist., 4: 443–456, pl. 39–40.) 4°. Boston. 1890

Forms pp. 419–432, pl. 31–32, of the fossil insects of North America, vol. 1. Ten species of eight genera are described and figured.

Sternberg, Kasper. Vortrag . . . in der allgemeinen versammlung des böhm. museums am 14 April, 1835. (Verh. gesellsch. vaterl. mus. Böhm., 1835: 12–30.) 16°. Prag. 1835.

Contains, pp. 23–24, a history of the discovery of the scorpion described in samevolume by Corda.

Stur, D. Die culm-flora der ostrauer und waldenburger schichten. (Beiträge zur kenntniss der vorwelt, heft ii.) (Abhandl. k. k. geol. reichsanst., 8, ii: 1–14, 1–366, pl. A–C, 18–47.) 4°. Wien. 1877.

Figures and describes, p. 5, note, Euphrynus salmi.

Thorell, T. On Proscorpius osbornei Whitfield. (Amer. nat., 20: 269–274.) 8°. Philadelphia. 1886.

Regards it as more nearly allied to Palæophonus than to the Carboniferous scorpions, with which Whitfield had classed it.

——— and **Lindström**, G. On a silurian scorpion from Gotland. 4°. Stockholm. 1885. 33 pp., 2 pl. (Kongl. svensk. vetensk. akad. handl., 21, no. 9.) 4°. Stockholm. 1885.

Extended description and detailed illustration of Palæophonus nuncius, followed by a classification of known fossil scorpions, and a characterization of the extinct groups.

Extract: (Biol. centralbl., 5: 657–661.) 8°. Erlangen. 1886.

Whitfield, Robert P. An American Silurian scorpion. (Science, 6: 87–88, fig.) 8°. New York. 1885.

First description and figure of Palæophonus osborni.

——— On a fossil scorpion from the Silurian rocks of America. (Bull. Amer. mus. nat. hist., 1: 181–196, pl. 19–20.) 8°. New York. 1885.

Whitfield, R. P.—Continued.

Full description and illustration of Proscorpius osborni, the first known Silurian scorpion in America.

——— Professor Thorell and the American Silurian scorpion. (Science, 7: 216–217.) 8°. New York. 1886.

A rejoinder to Thorell's criticism of the author's opinion of the systematic position of Proscorpius.

Woodward, H. On the discovery of a new and very perfect arachnide from the ironstone of the Dudley coal-field. (Geol. mag., 8: 385–388, pl. 11.) 8°. London. 1871.

Describes and figures a new specimen of the arachnid, to which Buckland, supposing it a beetle, formerly gave the name of Curculioides prestvicii. A list of fifty-four paleozoic insects is appended. An abstract will be found in Rep. Brit. assoc. adv. sc., 41, not., 112–113. 8°. London. 1872.

——— On a new arachnide from the coal measures of Lancashire. 8°. London. 1872. pp. 3. (Geol. mag., 9: 385–387.) 8°. London. 1872.

Describes Architarbus subovalis and compares it with A. rotundatus from the Carboniferous beds of Illinois. Also entitled on cover of separata: On a new fossil arachnide.

——— On the discovery of a fossil scorpion in the British coal measures. (Quart. journ. geol. soc. Lond., 32: 57–59, pl. 8.) 8°. London. 1876.

Describes and figures three distinct fragments of a scorpion, referred to one species called Eoscorpius anglicus. An abstract, under the title: The discovery of a fossil scorpion in the English coal measures is given in Hardw. sc. gossip, 1876; 20. 8°. London. 1876.

——— Discovery of the remains of a fossil crab (Decapoda-Brachyura) in the coal measures of the environs of Mons, Belgium. (Geol. mag., (2), 5: 433–436, pl. 11.) 8°. London. 1878.

Separate under the title: Discovery of a fossil crab in the coal measures of Belgium. 8°. London. 1878. pp. 4, pl. 11.

Description and illustration of Brachypyge carbonis, presumed to be the abdomen of a female brachyuran, but since shown to be that of an arachnid.

——— Découverte d'une espèce de décapode brachyure, dans le terrain houiller des environs de Mons. (Bull. acad. roy. Belg., (2), 45: 410–415, pl.) 16°. Bruxelles. 1878.

Much the same as the preceding, with the same plate. See also **Koninck, L. G. de**; and **Scudder, S. H.**

IIIc.—Neuropteroidea.

*** See also under Section I and Section II.

Andree, Richard. Die versteinerungen der steinkohlenformation von Stradonitz in Böhmen. (Neues jahrb. f. mineral. geol. und pal., 1864, heft 2: 160–176, taf. 4.) 8°. Stuttgart. 1864.

Describes and figures Acridites priscus.

Assmann, A. See **Roemer,** F.

Audouin, [Jean] Victor. Sur une empreinte d'aile d'un insecte névroptère inconnu . . . trouvé en Angleterre à Colebroskedale [sic] dans le Shropshire . . . dans un terrain houiller. (Ann. soc. ent. France, 2, bull. ent., 7–8.) 8°. Paris. 1833.

The first mention of a paleozoic insect. It is said to have been shown by Audouin at the meeting of the Association of German naturalists at Bonn in 1835, but I have been unable to examine the report of that meeting. Also mentioned by Boué in his Résumé des progrès de la géologie, 1833, p. 146, and in the Journ. d. géol., 3: 105 (neither seen).

Beneden, P. J. van, et **Coemans,** Eugène. Un insecte et un gastéropode pulmoné du terrain houiller. 8°. pp. 20, pl. (Bull. acad. roy. Belg., (2), 23, iv: 384–401, pl.) 8°. Bruxelles. 1867.

Describe in detail and figure Omalia macroptera, which the authors consider allied to Hemerobius.

REPRINT: Note sur un insecte et un gastéropode pulmoné du terrain houiller. (Ann. sc. nat., (5), zoöl., 7: 264–277, pl. 1, figs. 1–10.) 8°. Paris. 1867.

Borre, A. P. de. See **Volxem,** C. van.

Boué, Ami. See **Audouin,** V.

Bradley, F. H. Geology of Vermilion county. (Geol. surv. Ill., 4, chapt. 16, pp. 241–265.) 8°. [Springfield.] 1870.

Refers, p. 253, to a species of Miamia from the Carboniferous rocks near Georgetown.

Brongniart, C. J. E. La présence d'articulés dans les terrains siluriens. (Bull. d. séances soc. ent. France, 1884: 236–237.) 8°. Paris. 1884.

Brief notice of Palæoblattina douvillei.

——— [Dasyleptus lucasi.] (Bull. ent. soc. ent. France, 1885: 101–102.) 8°. Paris. 1885.

A Carboniferous thysanuran.

TRANSLATION: Fossil thysanura. (Psyche, 4: 353.) 4°. Cambridge. 1890.

Brongniart, C. J. E.—Continued.

——— Corydaloides scudderi. (Bull. d. séances soc. ent. France, 1885: 12–13.) 8°. Paris. 1885.

Brief description of a Carboniferous insect from Commentry, remarkable for the lateral appendages of the abdomen.

——— Insecte fossile du terrain houiller. (La nature, 13, ii: 156, figs. 1, 2.) 8°. Paris. 1885.

The same as the last in popular form and with figures.

TRANSLATION: A new fossil insect. (Pop. sc. news, 20: 62, figs. 1, 2.) 4°. Boston. 1886.

——— Sur la découverte d'une empreinte d'insecte dans les grès siluriens de Jurgues (Calvados). (Comptes rendus, 99: 1164–1165.) 4°. Paris. 1885.

First description of Palæoblattina douvillei.

ABSTRACT: Insecte silurien. (La nature, 13, ii: 79.) 8°. Paris. 1885.

——— Insecte fossile des grès siluriens. (La nature, 13, ii: 116, figs.) 8°. Paris. 1885.

Virtually the same as the last paper in the Comptes rendus, but with figures.

Coemans, Eugène. See **Beneden,** P. J. van, et **Coemans,** E.

Cornelius, C. [Ueber termiten.] (Verh. naturh. ver. preuss. Rheinl. Westph., 14: 20–44.) 8°. Bonn. 1857.

Contains, pp. 40–44, a letter from Dr. Hagen, criticising the treatment of the fossil Termites in Goldenberg's paper in Palæontographica.

Dana, J. D. On fossil insects from the Carboniferous formation in Illinois. (Amer. journ. sc. arts, (2), 37: 34–35, figs. 1–2.) 8°. New Haven. 1864.

Description and figures of two neuropteroid insects, the first recorded from the American coal formations.

Dawson, J. W. The oldest known insects. (Nature, 24: 483–484.) 4°. London. 1881.

Shows the Devonian age of the cordaite shales of New Brunswick, in which the then oldest known insects occur, from stratigraphical and botanical evidence, in opposition to the assumption of Hagen

Dohrn, Carl August. Zur literatur über fossile insecten. (Stett. entom. zeit., 42: 388–389.) 8°. Stettin. 1881.

Gives a résumé of Hagen's criticism of Scudder's Devonian insects.

Eaton, A. E. The oldest fossil insects. (Nature, 23:50.7) 4°. London. 1881.

Reply to Scudder's criticisms (in Devonian insects) of remarks on fossil Ephemeridæ in Eaton's Monograph.

Fritsch, A. Dva noví členovci z útvaru kamenouhelného v Čechách. (Vesmír, 9: 241-242, figs. A, B.) 4°. Praha. 1880.

Popular account of interesting remains of Ephemeridæ from the Carboniferous schists of Votvovic.

Geinitz, H. B. Ueber einige seltene versteinerungen aus der unteren dyas und der steinkohlen-formation. (Neues jahrb. f. miner., 1865: 385-394, taf. 2, 3.)

Describes Ephemerites rückerti with a letter upon the same from Dr. Hagen.

Goss, H. On the recent discovery of the wing of a cockroach in rocks belonging to the Silurian period. (Ent. monthl. mag., 21: 199-200.) 8°. London. 1885.

Notice of Palæoblattina douvillei.

TRANSLATION: Die jüngste entdeckung eines blattaflügels in felsen, die zur silurischen periode gehören. (Stett. ent. zeit., 46: 134-136.) 16°. Stettin. 1885.

Haase, Erich. Die vorfähren der insecten. (Sitzungsb. gesellsch. Isis, 1886, abhandl., 85-91.) 8°. Dresden. 1886.

Makes reference to Palæoblattina, but has little to say on paleontological ground.

Hagen, H. A. The oldest fossil insects. (Nature, 23: 483-484.) 4°. London. 1881.

Disputes unqualifiedly the conclusions of Scudder concerning the Devonian insects.

——— The oldest fossil insects. (Nature, 24: 356-357.) 4°. London. 1881.

Is chiefly concerned with the determination of a species of Pecopteris found in the Devonian insect beds, and the conclusion is drawn that "those oldest insects will have to be considered as belonging to the lower Carboniferous." See also Dawson, J. W.

——— The Devonian insects of New Brunswick. (Bull. mus. comp. zoöl., 8: 275-284.) 8°. Cambridge. 1881.

After a "detailed comparison of a majority of the types," arrives at conclusions "radically different from the views entertained by Mr. Scudder," in his memoir on the subject.

——— Fossil insects. (Nature, 32: 53-54.) 4°. London. 1885.

Criticism of Scudder's paper of 1885 on Devonian insects.

Hagen, H. A.—Continued.

——— Die devonischen insecten. 8°. Leipzig. 1885. 5 pp. (Zool. anz., 8: 296-301.) 8°. Leipzig. 1885.

Discussion of the systematic position of the forms described by Scudder.

——— See also **Dohrn**, C. A.; **Cornelius**, C.; **Geinitz**, H. B.; **Scudder**, S. H.

Heer, O. Fossile flora der Bären insel. 4°. Stockholm. 1871. pp. 51, pl. 15. (Kongl. svensk. vetensk. akad. handl., 9, no. 5.)

In a section on the equivalents of the Bear Island beds in America, he refers the Devonian of St. John to the lower Carboniferous and mentions four species of insects described from there by Scudder.

Humbert, Alois. See **Scudder**, S. H.

Krause, Ernst. See **Scudder**, S. H.

McLachlan, R. See **Woodward**, H.

Novák, Ottomar. Ueber Gryllacris bohemica, einen neuen locustidenrest aus der steinkohlenformation von Stradonitz in Böhmen. 8°. Wien. 1880. pp. 6, pl. 1. (Jahrb. geol. reichsanst. Wien, 30: 69-74, taf. 2.) 1. 8°. Wien. 1880.

Compares the new species with Gryllacris brongniarti (Mantell), which also is figured, and to which it is closely allied. Reviewed by Scudder. (Proc. Bost. soc. nat. hist., 21: 167.) 8°. Boston. 1881.

Roemer, F. Vorlegung eines im schieferthon der zwischen Königshutte und Laurahutte gelegenen Alfredgrube 10 m. im liegenden des Carolinenflötzes gefundenen insectenflügels. (Jahresb. schles. gesellsch. vaterl. cultur, 62: 226.) 8°. Breslau. 1885.

Referred by Assmann to the vicinity of Chauliodes.

Scudder, S. H. On the Devonian insects of New Brunswick. 8°. [Fredericton, 1865.] 1 p. (Bailey, Obs. geol. southern N. Brunsw., pp. 140-141.) 8°. Fredericton. 1865. (Amer. journ. sc., (2), 39: 357-358.) 8°. N. Haven. 1865. (Can. nat. geol., n. s., 2: 234-236.) 8°. Montreal. 1865. (Trans. entom. soc. Lond., (3), 2, proc., 117-118.) 8°. London. 1866.

Short statement of the probable affinities of the then oldest known insects, several species of which are distinguished.

——— On the fossil insects from Illinois, the Miamia and Hemeristia. (Amer. journ. sc., (2), 40: 269-271.) 8°. N. Haven. 1865.

Discussion of the affinities of two carboniferous insects, previously described by Dana.

Scudder, S. H.—Continued.

——— [Remarks on some fossil insects from the Carboniferous formation of Illinois and from the Devonian rocks of New Brunswick.] (Proc. Bost. soc. nat. hist., 10: 95–96.) 8°. Boston. 1865.

Merely an abstract of the two preceding papers.

——— An inquiry into the zoological relations of the first-discovered traces of fossil neuropterous insects in North America; with remarks on the difference in structure in the wings of living Neuroptera. 4°. [Boston.] 1866. pp. 20, pl. (Mem. Bost. soc. nat. hist., 1: 173-192, pl. 6.) 4°. Boston. 1866.

Forms pp. 1-20, pl. (1), of the Fossil insects of North America, vol 1.

Full treatment of the structure and relationship of Miamia and Hemeristia, which are referred to separate families, distinct from recent types. The wing structure of the modern families is also systematically reviewed.

——— An insect wing of extreme simplicity from the coal formation. (Proc. Bost. soc. nat. hist., 19: 248–249.) 8°. Boston. 1878. (Scudder, Entom. notes, 6: 37–38.) 8°. Boston. 1878.

Describes Euephemerites primordialis (which is probably a plant).

——— A Carboniferous termes from Illinois. (Proc. Bost. soc. nat. hist., 19: 300–301.) 8°. Boston. 1878. (Scudder, Entom. notes, 6: 54–55.) 8°. Boston. 1887.

Describes Termes contusus.

——— The Devonian insects of New Brunswick. 4°. Boston. 1880. pp. 41, pl. 1. (Anniv. mem. Bost. soc. nat. hist., scient. papers, art. [3.]) 4°. Boston. 1880 [1881]. pp. 41, pl. 1.

Forms vol. 1, pp. 155-193, pl. 7, of the Fossil insects of North America.

Detailed description of six species, the oldest then known, with a study of their affinities. A jurassic may-fly is also described and the general conclusions summarized at the close. An extended analysis (by H. A. Hagen) is given in Zoöl. jahresb., 1880, ii : 188–192. 8°. Leipsig. 1881.

EXTRACT: Relations of Devonian insects to later and existing types. (Amer. jour. sc. arts, (3), 21: 111–117.) 8°. New Haven. 1881. (Ann. mag. nat. hist., (5), 7: 255–261.) 8°. London. 1881.

Gives the general conclusions in full.

ABSTRACT: The Devonian insects. (Amer. nat., 14: 905-907.) 8°. Philadelphia. 1880.

Scudder, S. H.—Continued.

ABSTRACT: The Devonian insects of New Brunswick. (Science, 1: 292–293.) 4°. New York. 1880.

The above give the general conclusions somewhat condensed. More or less extended abstracts or notices will also be found in Arch. sc. phys. nat., (3), 5: 291-293 (by A. Humbert). 8°. Genève. 1881;—Bull. soc. ent. ital., 12: 279-280. 8°. Firenze. 1881;—Naturforscher, 1881: 141–143. 4°. Berlin. 1881;—Nation, 32: 150. 4°. New York, 1881. Also criticisms of the whole or part in Nature, 23: 483–484 (by H. A. Hagen). 4°. London. 1881;—Bull. mus. comp. zool., 8: 275–284 (by the same). 8°. Cambridge. 1881;—and Nature, 23: 507 (by A. E. Eaton). 4°. London. 1881.

TRANSLATION: Die devonischen insekten von Neu-Braunschweig und ihre beziehungen zu den spätern und noch lebenden insekten. (Kosmos, 5: 217–223.) 8°. Stuttgart. 1881.

A translation of the general conclusions, with an abstract of the other portions, and comments by the editor, Ernst Krause.

——— On Lithosialis bohemica. (Proc. Bost. soc. nat. hist., 21: 167.) 8°. Boston. 1881.

Reviews Novák's description of Gryllacris bohemica, showing that it is neuropterous not orthopterous.

——— The earliest winged insects of America. A reexamination of the Devonian insects of New Brunswick in the light of criticisms and of new studies of other paleozoic types. 4°. Cambridge. 1885. 8 pp. pl.

Forms vol. 1, pp. 275, 282, pl. 14, of the Fossil insects of North America.

A reply to the criticisms of Hagen.

——— See also **Dawson**, J. W.; **Eaton**, A. E.; **Hagen**, H. A.

Volxem, Camille van. Note critique sur l'interprétation donnée par M. de Borre d'une . . . empreinte fossile, celle du Pachytylopsis persenairei. (Comptes rendus soc. ent. Belg., (2), xxiv: 20–26, fig.) 8°. Bruxelles. 1876. (Ann. soc. ent. Belg., 19: 28–34.) 8°. Bruxelles. 1876.

This posthumous note is introduced by explanatory remarks of Weyers. The author concludes that it is doubtful whether the fossil is the wing of an orthopteron; that it certainly is not an acridian, and has nothing in common with Pachytylus.

Also published separately entitled: Note critique sur le Pachytylopsis persenairei (de B.) par feu M. Camille Van Volxem. 8°. pp. 7.

Waterhouse, C. O. See **Woodward**, H.

Westwood, J. O. See **Woodward**, H.

Weyers, J. L. See **Volxem**, C. van.

Woodward, H. On a remarkable fossil orthopterous insect from the coal measures of Scotland. (Quart. journ. geol. soc. Lond., 32: 60–64, pl. 9.) 8°. London. 1876.

Describes and figures Lithomantis carbonarius, which with Westwood, Waterhouse, and McLachlan, he considers as belonging in "the neighborhood of the Mantidæ." Corydalis (Gryllacris) brongniarti and a modern species of Blepharis are also figured for comparison as related to it. A list of fifty-eight paleozoic insects is appended. An abstract, under the title: Remarkable fossil orthopterous insect from the coal measures of Britain, appeared in Hardw. sc. gossip, 1876: 20. 8°. London. 1876.

IIId.—Orthopteroidea.

⁂ See also under Section I and Section II.

Andrae, Karl Justus. Eine alge und eine insectenflügel aus der steinkohlenformation Belgiens. (Sitzungsb. niederrhein. gesellsch. Bonn, 1876: 27–28.) 8°. Bonn. 1877.

Mere mention of a Blattina.

Bar [Constant]. Sur la Breyeria borinensis. (Comptes rendus soc. ent. Belg., (2), xxviii: 6.) 8°. Bruxelles. 1876. (Ann. soc. ent. Belg., 19, comptes rendus, 53–54.) 8°. Bruxelles. 1876.

Considers Breyeria an homopterous insect, and maintains that the lack of flowers in Carboniferous times is not proof of the absence of Lepidoptera.

Borre, A. P. de. [Acknowledgment of objections to the lepidopterous character of Breyeria from Hagen, Heer, Giard, and Scudder.] (Comptes rendus soc. ent. Belg., (2), xxii: 5–6; followed by discussion of the subject by Saporta and Weyers, pp. 6–7.) 8°. Bruxelles. 1876. (Ann. soc. ent. Belg., 19: 3–4.) 8°. Bruxelles. 1876.

——— Note sur le Breyeria borinensis. pp. 6. 8°. Bruxelles. 1879. (Comptes rendus soc. ent. Belg., (2), lxv: 7–12.) 8°. Bruxelles. 1879. (Ann. soc. entom. Belg., 22, compte rend., 77–83.) 8°. Bruxelles. 1879.

Maintains Breyeria to be an ancestral stock of the type of Lepidoptera.

——— See also **Giard**, A.

Brongniart, C. J. E. Note sur la découverte d'un orthoptère coureur de la famille des phasmiens (Protophasma dumasi) dans les terrains supra-houillers de Commentry (Allier). (Bull. séances soc. ent. France, 1878, vii: 69–70.) 8°. Paris. 1878.

The same with omission of the word "Note" in the title. (Ann. soc. ent. France, (5), 8, bull., 57–58.) 8°. Paris. 1878. (Bull. hebdom. assoc. sc. France, 22: 172–173.) 8°. Paris. 1878.

The same as the last. 8°. Bruxelles. 1878. pp. 4. (Comptes rendus soc. ent. Belg., (2), xlvii: 9–12.) 8°. Bruxelles. 1878.

See the next entry.

——— Note sur un nouveau genre d'orthoptère fossile de la famille des phasmiens provenant des terrains suprahouillers de Commentry (Allier) (Protophasma dumasii). 8°. Paris. 1878. pp. 9, pl. (Ann. sc. nat., (6), zool., tom. 7, art. 1, pp. 8, pl. 6.) 8°. Paris. 1878.

Text substantially the same as the preceding. A discovery carrying this group of Orthoptera back at once from the tertiary to the carboniferous. Noticed by Dr. Hector George in the Feuilleton of Le constitutionnel, Nov. 6, 1878; see also Girard, M.

TRANSLATION.—On a new genus of orthopterous insects of the family Phasmidæ (Protophasma dumasii) from the upper coal measures of Commentry, dept. Allier, France. 8°. London. 1879. pp. 6, pl. The cover entitled: New fossil insect from the coal measures. (Geol. mag., n. s., dec. 2, vol. 6, pp. 97–102, pl. 4.) 8°. London. 1879.

——— Note sur les insectes fossiles de Commentry. (Compte rendu soc. géol. France, 1882–83: 15–16.) 8°. Paris. 1883. (Bull. soc. géol. Fr., (3), 11: 240–241.) 8°. Paris. 1883.

Brief description of Titanophasma.

——— [Sur le Titanophasma fayoli.] (Compte rendu soc. géol. France, 1882–83: 23.) 8°. Paris. 1883.

Notice of a wing probably belonging to this Carboniferous insect.

——— Note complémentaire sur le Titanophasma fayoli et sur les Protophasma dumasii et woodwardii. 8°. Paris. 1883. pp. 2. (Bull. soc. entom. France. 1883. 20–21.) 8°. Paris. 1883

Additions and corrections to former statements.

Brongniart, C. J. E.—Continued.

——— Un nouvel insecte fossile. (L'écho des mines et de la métallurgie viii: 5–6.) 4°. Lyon. 1883.

Much the same as his paper upon Titanophasma, with similar title, read before the Geological society in 1882, but with the omission of the list of Carboniferous insects.

——— Sur un gigantesque neurorthoptère, provenant des terrains houillers de Commentry (Allier). (Comptes rendus, 98: 832–833.) 4°. Paris. 1884.

Describes Titanophasma fayoli. Noticed in Ent.-nachr., 10: 118 8°. Berlin. 1884.

——— Restaurations d'ailes d'insectes provenant du terrain carbonifère de Commentry (Allier). Bull. d. séances soc. ent. France, 1884: 225–226.) 8°. Paris. 1884.

Brief description of Dictyoneura ingens, with notice of the fauna of Commentry.

——— Les blattes de l'époque houillère. pp. 3. (Comptes rendus, 108: 252–254.) 4°. Paris. 1889.

Nearly six hundred cockroaches have been found in the Carboniferous deposits of Commentry, among which the Mylacridæ, not before recognized in the Old World, are as numerous as the Blattinariæ, and the structure of other parts of the body supports the division above mentioned, which had been based on characters drawn from the wings only.

Clark, Edgar F. Studies in the Rhode Island coal measures. (Proc. Newport nat. hist. soc., 2: 9–12.) 8°. Newport. 1884.

Notices discovery of a cockroach.

Dawson, J. W. Note on some new animal remains from the Carboniferous and Devonian of Canada. (Quart. journ. geol. soc. Lond., 26, i: 166.) 8°. London. 1870.

Notices the occurrence of cockroaches from the Nova Scotia coal measures.

Deichmüller, J. V. Ueber einiger blattiden aus dem brandschiefern der unteren dyas von Weissig bei Pillnitz. (Sitzungsb. gesellsch. Isis, 1882: 33–44, pl. 1.) 8°. Dresden. 1882.

Describes and figures two species of Etoblattina and one of Oryctoblattina.

——— Ueber zwei blattinen-reste aus den unteren lebacher schichten der Rhein provinz. (Ber. senckenb. gesellsch. Frankfurt, 1886–'87: 89–94, pl. 3.) 8°. Frankfurt. 1887.

Describes two species of Etoblattina.

Deichmüller, J. V. See also **Geinitz**, H. B.

Eaton, A. E. Did flowers exist during the Carboniferous epoch? (Nature, 20: 315.) 4°. London. 1879.

Breyeria is an ephemerid.

TRANSLATION: Der angebliche steinkohlenzeit-schmetterling. (Kosmos, 5: 461–462.) 8°. Leipzig. 1879.

Elrod, Moses N., and **McIntire**, E. S. Report of a geological survey of Orange County. (Ann. rep. geol. surv. Ind., 7: 203–239.) 8°. Indianapolis. 1876.

The geological position of Paolia vetusta is shown on pp. 206, 221.

Fontaine, William Morris, and **White**, I. C. The Permian or upper Carboniferous flora of West Virginia and S. W. Pennsylvania. 8°. Harrisburg. 1880. (Rep. progr. second geol. surv. Penn., PP. pp. 10, 143, map, pl. 38.)

Contains a description, p. 104, and a figure, pl. 38, figs. 5, 5ᵃ, of Gerablattina balteata, by S. H. S[cudder].

Geinitz, F. E. Versteinerungen aus dem brandschiefer der unteren dyas von Weissig bei Pillnitz in Sachsen. 8°. Stuttgart. 1873. pp. 14, pl. (Neues jahrb. f. miner., 1873: 691–704, taf. 3.) 8°. Stuttgart. 1873.

Describes two Blattinæ. See same title in Section III*e*.

——— Ueber neue aufschlüsse im brandschiefer der unteren dyas von Weissig bei Pillnitz in Sachsen. 8°. Stuttgart. 1875. pp. 14, pl. (Neues jahrb. f. miner., 1875, 1–14, taf. 1.) 8°. Stuttgart. 1875.

II. Insecten, pp. 4–6; describes four species of Blattina, one of them as new.

——— Die blattinen aus der unteren dyas von Weissig bei Pillnitz. 4°. Halle. 1880. pp. 22, pl. 1. (Nova acta k. leop.-carol.-deutschen akad. naturf., 41. ii, no. 7, pl. 39.) 4°. Halle. 1880.

Gives a full description, with figures, of the diversity in neuration in opposite wings, of a species of cockroach, together with criticisms of Scudder's Palæozoic cockroaches, and notes and figures of seven other forms.

Geinitz, H. B. Bericht über die . . . auf dem reviere des carlschachtes der lugau-niederwürschnitzer steinkohlenwerke gesammelten steinkohlenpflanzen.) Sitzungsb. naturw. gesellsch. Isis, 1879, 7–13, taf. 1.) 8°. Dresden. 1879.

Geinitz, H. B.—Continued.

Describes, with Deichmüller, pp. 12-13 (two figures in text), Blattina dresdensis from the coal beds near Klein-Opitz, Saxony.

George, Hector. See **Brongniart**, C. J. E.

Giard, Alfred. Un papillon dans la houille; note de M. Preudhomme de Borre. (Bull. scient. hist. et litt. dép. Nord, 7: 121-127.) 8°. Lille. 1875.

Discusses the affinities of Breyeria, concluding that it is not a lepidopteron but belongs to the Archiptera.

——— See also **Borre**, A. P. de.

Giebel, C. G. Ueber insectenreste im wettiner steinkohlengebirge. (Jahresb. naturw. ver. Halle, 2: 8-9.) 8°. Berlin. 1850.

Mention of the cockroaches described by Germar.

Girard, M. Un spectre fossile. (La nature, 7: 108-110, fig.) 4°. Paris, 1879.

Popular account of Protophasma dumasi.

Goeppert, Heinrich Robert. Die fossile flora der permischen formation. 4°. Cassel. 1864-65. 2 t. p., pp. 316, taf. 64. (Palaeontogr., bd. 12.) 4°. Cassel. 1864-65.

Contains, p. 289: D. Beiträge zur fauna der permischen formation, in which he mentions and names two wings and a body of insects regarded as cockroaches (localities not specified) which are figured on plates 28 and 64.

Goldenberg, F. Zwei neue ostracoden und eine blattina aus der steinkohlenformation von Saarbrücken. (Neues jahrb. f. mineral., 1870: 286-289, figs.) 8°. Stuttgart. 1870.

Blattina winteriana is described and figured on pp. 288-289.

——— Beitrag zur insectenfauna der kohlenformation von Saarbrücken. (Zeitschr. ges. naturw., (3), 6: 184-187, figs.) 8°. Berlin. 1881.

Describes Anthracoblattina scudderi.

Hagen, H. A. See **Borre**, A. P. de.

Heer, O. New orthopterous insect in the coal measures of Scotland. (Geol. mag., (2), 3: 520.) 8°. London. 1876.

Notes some omissions of fossil cockroaches in the list of Carboniferous insects attached to Woodward's paper with a similar title.

——— See also **Borre**, A. P. de.

Jordan, Hermann und **Meyer**, C. E. H. von. Ueber die crustaceen der steinkohlenformation von Saarbrücken. (Palaeontogr., 4: 1-15, pl. 1-2.) 4°. Cassel. 1854.

Describes, among other things, Adelophthalmus (Eurypterus) granosus, pp. 8-12, pl. 2, figs. 1-2, afterwards considered a cockroach by Goldenberg and others.

Kirkby, James W. On the remains of insects from the coal measures of Durham. (Geol. mag , 4: 388-390, pl. 17, figs. 6-8.) 8°. London. 1867.

Describes and figures without names two or three orthopterous insects from near Claxheugh.

Kušta, J. Ueber eine Blattina aus der lubnaer gaskohle. 8°. Prag. 1883. 8 pp., 1 pl. (Sitzungsb. k. böhm. gesellsch. wiss., 1882: 430-437, pl.) 8°. Prag. 1882.

Describes Blattina (Anthracoblattina) lubnensis, and makes extended comparisons.

——— Ueber einige neue, böhmische blattinen. 8°. Prag. 1883. 4 pp., figs. (Sitzungsb. k. böhm. gesellsch. wiss., 1883: 211-215, figs.) 8°. Prag. 1883.

Three species are described and two named.

——— O blattině z lupkového uhlí z Třemošné u Plzně. (Věstn. král. ceške společn. nauk, 1888: 387-393, fig.) 8°. Prag. 1888.

Describes Oryctoblattina arndti.

Lesquereux, Leo. Botanical and palæontological report on the geological state survey of Arkansas. (Owen, Second rep. geol. reconn. Arkansas, pp. 295-399, pl. 1-6.) 8°. Philadelphia. 1860.

Contains description, p. 314 and figure, pl. 5, fig. 11, of Blattina venusta from Carboniferous rocks of Frog Bayou.

McIntire, E. S. See **Elrod**, M. N., and **McIntire**, E. S.

McLachlan, R. Note sur l'insecte fossile décrit par M. P. de Borre sous le nom de Breyeria borinensis. (Comptes rendus soc. ent. Belg., (2), xli: 5-6.) 8°. Bruxelles. 1877. (Ann. soc. ent. Belg., 20: 36-37.) 8°. Bruxelles. 1877.

Considers the insect an ephemerid.

——— Did flowers exist during the Carboniferous epoch? (Nature, 19: 554.) 4°. London. 1879.

Breyeria is an ephemerid.

McLachlan, R.—Continued.

——— Did flowers exist during the Carboniferous epoch? (Nature, 20: 5–6.) 4°. London. 1879.

Response to Mr. Wallace, disputing the lepidopterous nature of Breyeria borinensis.

Mahr, Carl Hermann. Beitrag zur kenntniss fossilen insecten der steinkohlen formation Thuringens. (Neues jahrb. f. mineral., 1870: 282–285, figs.) 8°. Stuttgart. 1870.

Description and figure of two species of Blattina from Ilmenau.

Meyer, C. E. H. von. See **Jordan**, H., und **Meyer**, C. E. H.

Mylacris packardii. (Rand. notes nat. hist., 2: 64.) 8°. Providence. 1885.

Mere mention of the name of a Carboniferous cockroach from Rhode Island.

Rost, Woldemar. De filicum ectypis obviis in lithanthracum vettinensium lobeiunensiumque fodinis. Halæ. 16°. 1839. pp. 4, 32.

Germar's Blattina didyma is described as a fern under the generic name Dictyopteris.

Saporta, *Marquis* Gaston de. See **Borre**, A. P. de; also Section V*k*.

Scudder, S. H. Two new fossil cockroaches from the Carboniferous of Cape Breton. (Can. nat., (n. s.), 7: 271–272, figs. 1–2.) 8°. Montreal. 1874.

Describes Blattina heeri and B. bretonensis.

——— Note on the wing of a cockroach from the Carboniferous formation of Pittson, Penn. (Proc. Bost. soc. nat. hist., 19: 238–239.) 8°. Boston. 1878. (Scudder, Entom. notes, 6: 35–36.) 8°. Boston. 1878.

Describes Blattina fascigera.

——— [Lettre à M. de Selys-Longchamps.] (Compt. rend. soc. ent. Belg., (2), xxi: 2.) 8°. Bruxelles. 1876. (Ann. soc. ent. Belg., 19, compt. rend., 2.) 8°. Bruxelles. 1876.

Expressing an opinion against the lepidopterous character of Breyeria. Translation by Selys.

——— Palæozoic cockroaches; a complete revision of the species of both worlds, with an essay toward their classification. (Mem. Bost. soc. nat. hist., 3: 23–134, pl. 2–6.) 4°. Boston. 1879.

Forms vol. 1, pp. 43–153, pl. 2–6, of the Fossil insects of North America.

The first attempt to classify any group of paleozoic insects of both worlds by characters drawn from the venation of the wing. More than sixty species (thirteen of them new) are described and figured; they are divided into two tribes and eleven genera, and separated as a whole from modern cockroaches under the name Palæoblattariæ. See also Geinitz, F. E.

——— [Exhibition of a Carboniferous cockroach.] (Psyche, 3: 186.) 4°. Cambridge. 1881.

Showing difference in venation of opposite wings.

——— A new and unusually perfect Carboniferous cockroach from Mazon Creek, Illinois. (Proc. Bost. soc. nat. hist., 21: 391–396.) 8°. Boston. 1882.

Describes Etoblattina mazona, the neuration of the wings of the two sides differing. Also separately printed, with a title-page and same pagination.

——— A gigantic walking-stick from the coal. (Science, 1: 95–96, fig.) 8°. Cambridge. 1883.

Notice of Titanophasma fayoli.

——— The species of Mylacris, a Carboniferous genus of cockroaches. (Mem. Bost. soc. nat. hist., 3: 299–309, pl. 27, figs. 5–11.) 4°. Boston. 1884.

Forms vol. 1, pp. 263–273, pl. 13, of the Fossil insects of North America.

Ten species are enumerated and tabulated and six described at length.

——— Dictyoneura and the allied insects of the Carboniferous epoch. (Proc. Amer. acad. arts sc., 20: 167–173.) 8°. Boston. 1885.

Systematic revision of the species which had been referred to Dictyoneura with descriptions of many new genera and species, separated by analytical tables.

——— Cockroaches from the Carboniferous period. (Proc. Bost. soc. nat. hist., 23: 356–357.) 8°. Boston. 1887.

Criticism of Woodward's conclusions concerning some British species.

——— An interesting paleozoic cockroach fauna, at Richmond, Ohio. (Proc. Bost. soc. nat. hist., 24: 45–53.) 8°. Boston. 1889.

Description of eight new species of Etoblattina.

——— New types of cockroaches from the Carboniferous deposits of the United States. (Mem. Bost. soc. nat. hist., 4: 401–415, pl. 31–32.) 4°. Boston. 1890.

Forms pp. 377–391, pl. 23–24, of the Fossil insects of North America, vol. 1. Ten species and two genera are described.

Scudder, S. H. See also **Borre**, A. P. de; **Fontaine**, W. M., and **White**, I. C.

Selys-Longchamps, M. E. de. See **Scudder**, S. H.

Smith, Sidney Irving. Notice of a fossil insect from the Carboniferous formation of Indiana. (Brief contributions to zoology from the museum of Yale College, no. ix.) 8°. [New Haven. 1871.] pp. 3, fig. (Amer. journ. sc., (3), 1: 44–46, fig.) 8°. New Haven. 1871.

Describes Paolia vetusta.

Wallace, A. R. Did flowers exist during the Carboniferous epoch? (Nature, 19: 582.) 4°. London. 1879.

Maintains the lepidopterous nature of Breyeria. See also McLachlan, R.

Weyers, J. L. See **Borre**, A. P. de.

White, I. C. See **Fontaine**, W. M., and **White**, I. C.

Woodward, H. Some new British Carboniferous cockroaches. (Geol. mag., n. s., dec. 3, vol. 4: 49–58, pl. 2.) 8°. London. 1887.

After a historical résumé of Carboniferous cockroaches, with figures of a few species, borrowed from Miall's work, three British species are described referred to Etoblattina, Lithomylacris, and Leptoblattina. See Scudder, S. H.

———. On the discovery of the larval stage of a cockroach, Etoblattina peachii H. Woodw. from the coal measures of Kilmaurs, Ayrshire. (Geol. mag., (3), 4: 433–435, pl. 12.) 8°. London. 1887.

Separate under the title: On Etoblattina peachii. Full description; placed provisionally in Etoblattina.

IIIe.—Hemipteroidea.

⁂ See also under Section I and Section II.

Brauer, F. Betrachtungen über die verwandlung der insekten im sinne der descendenztheorie. 8°. Wien. 1869. pp. 21, pl. (Verhandl. k. k. zool.-bot. gesellsch. Wien., 19: 299–319, pl. 10.) 8°. Wien. 1869.

Contains, p. 19 [317], a slight reference to the structure of Eugereon.

Dohrn, A. Eugereon boeckingi, eine neue insectenform aus dem todtliegenden. 4°. Cassel. 1866. t. p., pp. 8, taf. (Palaeontogr., 13: 333–340, taf. 41.) 8°. Cassel. 1866.

Dohrn, A. Continued.

Description and discussion of the affinities of the most remarkable fossil insect yet discovered, considered here to unite the Hemiptera and Neuroptera. Dictyoptera is proposed as an ordinal term to include it.

Geinitz, F. E. Versteinerungen aus dem brandschiefer der unteren dyas von Weissig bei Pillnitz in Sachsen. 8°. Stuttgart. 1873. pp. 14, pl. (Neues jahrb. f. miner., 1873: 691–704, taf. 3.) 8°. Stuttgart. 1873.

Describes a Fulgorina. See same title in Section III*d*.

Snellen van Vollenhoven, Samuel Constant. Eugereon boeckingi. (Verslag alg. vergad. nederl. entom. vereen., 22: 13.) 8°. 's Gravenhage. 1867. (Tijdschr. v. entom., (2), 3: 13.) 8°. 's Gravenhage. 1868.

Denies that there are any purely hemipterous characteristics in Eugereon; but regards it as simply neuropterous.

IIIf.—Coleopteroidea.

⁂ See also under Section I and Section II.

Brongniart, C. J. E. Note sur des perforations obervées dans deux morceaux de bois fossile. (Ann. soc. ent. France, (5), 7: 215–220, pl. 7, ii.) 8°. Paris. 1877.

Describes the borings of a xylophagid allied to Hylesinus. Noticed by Dr. Hector George in the Feuilleton of Le constitutionnel for 21 Nov., 1877. See also Girard, M. See same title in Section V*f*.

Dathe, E. Ueber schlesische culmpetrefracten. (Zeitschr. deutsch. geol. gesellsch., 1885: 542–543.) 8°. Berlin. 1885.

Announces the discovery of beetle remains in the culm near Steinkunzendorf.

Geinitz, H. B. Die versteinerungen der steinkohlenformation in Sachsen. f°. Leipzig. 1855. pp. 7, 61, pl. 35.

Insecta, pp. 1–2, pl. 8, figs. 1, 4, are represented only by by borings of supposed coleoptera.

George, Hector. See **Brongniart**, C. J. E.

G[irard], M. Les perforations des bois fossiles. (La nature, 6: 112, figs. 1–6.) 4°. Paris. 1878.

Popular account of Brongniart's two papers on the subject with figures. See same title in Section V*f*.

Rouchy, *l'abbé*. Découvertes de perforations de larves fossiles. (Petites nouv. entom., 1: 551.) 4°. Paris. 1875.

Borings of Coleoptera in a trunk of fossil Walchia.

IV.—GENERAL FOR MESOZOIC TIME.

⁂ See also under Section I.

Assmann, A. Ueber die von Germar beschriebenen und im paläontologischen museum zu München befindlichen insekten aus dem lithographischen schiefer in Bayern. (Amtl. ber. versamml. deutsch. naturf., 50: 191–192.) 4°. München. 1877.

A brief statement of his views of the modern groups in which Germar's species should be placed.

Beckles, S. H. On the lowest strata of the cliffs at Hastings. (Quart. journ. geol. soc. Lond., 12, proc., 288–292; with a section.) 8°. London. 1856.

Merely mentions (p. 291) the discovery of insects in the upper members of the series, referred to the wealden.

Binfield, Henry. See **Binfield, W. R.** and H.

Binfield, William R. and Henry. On the occurrence of fossil insects in the wealden strata of the Sussex coast. (Quart. journ. geol. soc. Lond., 10, proc., 171–176.) 8°. London. 1854.

The insects are mentioned only by suborders, and the paper is mostly made up of geological sections of the places where insects were found.

Blake, J. F. See **Tate, R., and Blake, J. F.**

Bouvé, Thomas Tracy. See **Deane, J.**

Brauer, F., Redtenbacher, Jos., und Ganglbauer, Ludwig. Fossile insekten aus der juraformation Ost-Siberiens. 4°. St. Petersburg. 1889. pp. 2, 22, pl. 2. (Mém. acad. sc. St.-Pétersb., (7), 36, no. 15.) 4°. St. Petersburg. 1889.

The authors describe and figure about a couple of dozen insects, mostly aquatic and larval forms. They regard Palæontina and Phragmatœcites as Cicadidæ.

Brodie, P. B. A notice on the discovery of the remains of insects, and a new genus of isopodous Crustacea belonging to the family Cymothoidæ in the wealden formation in the Vale of Wardour, Wilts. (Proc. geol. soc. Lond., 3: 134–135.) 8°. London. 1839. (Lond. Edinb. phil. mag., (3), 15: 534–536.) 8°. London. 1839.

A section of the locality with a general account of its fossil remains, those of the insects belonging to several orders. An extended notice will be found in the Neues jahrb. f. mineral., 1843: 238–239. 8°. Stuttgart. 1843.

Brodie, P. B.—Continued.

——— On the discovery of insects in the lower beds of lias of Gloucestershire. (Rep. brit. assoc. adv. sc., 1842, notices, 58.) 8°. London. 1843.

General notice of the finding of a few insect remains, mostly coleopterous, near Cheltenham.

——— Notice on the discovery of insects in the wealden of the Vale of Aylesbury, Bucks, with some observations on the distribution of these and other fossils in the Vale of Wardour, Wiltshire. (Ann. mag. nat. hist., 11: 480–482.) 8°. London. 1843.

Sufficiently described by the title.

——— Notice on the discovery of insects in the wealden in the Vale of Aylesbury, Bucks, with some additional observations on the wider distribution of these and other fossils in the Vale of Wardour, Wiltshire. (Lond. Edinb. Dubl. phil. mag., (3), 23: 512–514.) 8°. London. 1843. (Proc. geol. soc. Lond., 4: 780–782.) 8°. London. 1843.

Same as the preceding.

——— Notice on the discovery of the remains of insects in the lias of Gloucestershire, with some remarks on the lower members of this formation. (Lond. Edinb. Dubl. phil. mag., (3), 23: 529–531.) 8°. London. 1843. (Ann. mag. nat. hist., 11: 509–511.) 8°. London. 1843. (Proc. geol. soc. Lond., 4: 14–16.) 8°. London. 1842–43. (Athenæum, 1843: 40–41.) 4°. London. 1843.

Notice of the discovery and geological position of insects near Gloucester and Cheltenham, at Wainlode Cliff and at Westbury; an extension of the paper mentioned from the British association report.

ABSTRACT: Sur des débris d'insectes du lias du Gloucestershire. (L'institut, 1843, i, 47.) 4°. Paris. 1843.

ABSTRACT: Notiz über die entdeckung von insectenresten im lias von Gloucestershire mit einigen bemerkungen über die untern glieder dieser formation. (Neues jahrb. f. mineral., 1844: 127–128.) 8°. Stuttgart. 1844.

——— A history of the fossil insects in the secondary rocks of England.

Brodie, P. B.—Continued.
Accompanied by a particular account of the strata in which they occur, and of the circumstances connected with their preservation. 8°. London. 1845. pp. (18), 130, pl. 11.

The introductory observations, explanation of plates, notes, and many names, are by Westwood. This, the only separate work on fossil insects ever published in England, is still the chief source of our too inexact knowledge of the liassic and other secondary insects of that country. The body of the work, Mr. Brodie's part, is divided into four chapters, of which the first deals with the wealden, the second with the oolite, the third with the lias, and the fourth with miscellaneous matter, including insects of continental strata.

——— On the insect-limestone and its associate beds. (Murchison, Outl. geol. Cheltenham. 2d ed., 51–53.) 8°. London. 1845.

Simply a discussion of the mode of deposition of these rocks.

——— Notice of the existence of purbeck strata with remains of insects and other fossils, at Swindon, Wilts. (Quart. journ. geol. soc. Lond., 3, proc., 53–54.) 8°. London. 1847.

A geological paper, giving no further account of the insects than appears in the title.

——— On the insect beds in the purbeck formation of Dorset and Wilts; and a notice of the occurrence of a neuropterous insect in the Stonesfield slate of Gloucestershire. (Quart. journ. geol. soc. Lond., 9, proc., 344.) 8°. London. 1853.

Published only by title; probably same as next.

——— On the insect beds of the purbeck formation in Wiltshire and Dorsetshire. (Quart. journ. geol. soc. Lond., 10, proc., 475–482.) 8°. London. 1854.

Mostly occupied with geological sections, but p. 481 gives an account, in general terms, of the condition and character of the insects discovered, most of which were Coleoptera.

——— A sketch of the lias generally in England, and of the insect and saurian beds. (Proc. Warw. nat. arch. field club, 1868, pp. 1–24.) 8°. Warwick. 1868.

Mostly occupied with the geology of the insect-beds, but with occasional reference (especially on pp. 18–19) to the insects contained in them.

——— Notes on a railway-section of the lower lias and rhætics between Stratford-on-Avon and Fenny Compton, on the occurrence of the rhætics near Kineton, and the insect beds near Knowle, in Warwickshire, and on the recent discovery of the rhætics near Leicester. (Quart. journ. geol. soc. Lond., 30, i: pp. 746–749.) 8°. London. 1874.

Simply notices the discovery of certain insects at Copt Heath near Knowle.

——— The lower lias at Eatington and Kineton, and on the rhoetics in that neighbourhood, and their further extension in Leicestershire, Nottinghamshire, Lincolnshire, Yorkshire, and Cumberland; . . . being a paper read at the annual meeting of the Warwickshire natural history and archæological society, held at the museum, Warwick, April 2nd, 1875. 8°. Warwick. [n. d.] pp. 14. (Ann. rep. Warw. nat. hist. arch. soc.)

Principally occupied with geology, but with a few special references to insects, particularly on p. 10; separate only seen.

——— See also **Strickland, H. E.**

Buckman, James. On the occurrence of the remains of insects in the upper lias of the county of Gloucester. (Proc. geol. soc. Lond., 4: 211–212.) 8°. London. 1843. (Lond. Edinb. Dubl. phil. mag., 24: 377.) 8°. London. 1844.

Notices Æschna brodiei, without description, and the occurrence of two Coleoptera and a Tipula at Dumbleton.

Chambers, Victor Tousey. Burrowing larvæ. (Nature, 25: 529.) 4°. London. 1882.

Compares recent and fossil "mines" of lepidopterous larvæ, referring to Hagen's statement on a previous page.

Dana, J. D. See **Deane, J.**

Deane, James. On the sandstone fossils of Connecticut River. (Journ. acad. nat. sc. Philad., (2), 3: 173–178, pl. 18–20.) 4°. Philadelphia. 1856.

On pl. 19 are figured tracks of what the author presumes are articulated animals, in which he is supported by the opinions, quoted on p. 177, of Professors Leidy, Wyman, and Dana, the latter believing them probably crustacean. Some are possibly the tracks of insects.

——— Ichnographs from the sandstone of Connecticut River. 4°. Boston. 1861. pp. 61, pl. 46.

Contains introduction, pp. 3–4, by A. A. Gould; biographical notice (of Dr. Deane) by H. I. Bowditch, pp. 5–14; a memoir upon the fossil footmarks and other impressions of the Connecticut River sandstone, by James Deane (compiled by

Deane, J.—Continued.

Thomas Tracey Bouvé), with a note by the compiler, p. 17, and the memoir, pp. 19–32; description of the plates, pp. 33–61 (by T. T. Bouvé).

References to insect tracks are made on p. 26, and in the descriptions of pl. 40–42 (pp. 57–58).

Deichmüller, J. V. Die insecten aus dem lithographischen schiefer im Dresdener Museum. (Mitth. k. min.-geol. praeh. mus. Dresd., heft 7, pp. 14 (8–14 marked 4–10), 88, pl. 1–5.) 4°. Cassel. 1886.

Describes at length over fifty species, of which thirty-six are figured with many rectifications of earlier authors.

Dupont, Édouard. Sur la découverte d'ossements d'iguanodon, de poissons et de végétaux dans la fosse Sainte-Barbe du charbonnage de Bernissart. (Bull. acad. sc. Belg., (2), 46: 387–408.) 8°. Bruxelles. 1878.

Mentions, p. 395, the occurrence of insect larvæ in this wealden deposit.

Emmons, Ebenezer. American geology, containing a statement of the principles of the science, with full illustrations of the characteristic American fossils, with an atlas and a geological map of the United States. Part VI. 8°. Albany. 1857. pp. 10, 152, pl. [13].

P. 136 compares trails found in Trias, some of which he figures, with those of living insects.

Fritsch, A. O hmyzech v českém útvaru křídovém. (Vesmír, 13: 205–206, figs.) 4°. v Praze. 1884.

Briefly notices and figures elytra of four beetles, eggs of a sawfly, and larval cases of a caddis fly and a tineid from the cretaceous of Bohemia.

Reference is made to an earlier notice of the beetles named Silphites in the Archiv pro vyzkum čech., dil. 1, odd. 2, str. 170, which I have not seen.

Fromont [Louis]. [Empreintes sur une plaque de pierre lithographique.] (Ann. soc. ent. Belg., 23, comptes rendus, 35.) 8°. Bruxelles. 1880.

Mention of impressions considered to resemble the antennæ of an insect.

Ganglbauer, Ludwig. See **Brauer**, F., **Redtenbacher**, J., und **Ganglbauer**, L.

Geinitz, F. E. Der jura von Dobbertin in Mecklenburg und seine versteinerungen. (Zeitschr. deutsch. geol. gesellsch., 32: 510–535, taf. 22.) 8°. Berlin. 1880.

Geinitz, F. E.—Continued.

Contains, pp. 519–531, Insectenfauna des dobbertiner unteren jura, in which seventeen insects are described, the greater part of them new. The plate is wholly devoted to insects.

——— Die flötzformation Mecklenburgs. 8°. Güstrow. 1883. 150 pp., map, 6 pl. (Arch. ver. freunde naturg. Mecklenb., 37: 1–151.) 8°. Güstrow. 1883.

A few insects are described on pp. 29–31 and figured on pl. 6.

——— Ueber die fauna des dobbertiner lias. (Zeitschr. deutsch. geol. gesellsch., 1884: 566–583, pl. 13.) 8°. Berlin. 1884.

Describes or mentions over forty species, the Coleoptera only by reference to similar forms from the Swiss and English Lias. Twenty-seven specimens are figured.

Germar, E. F. Ueber die versteinerten insecten des juraschiefers von Solenhofen aus der sammlung des grafen zu Münster. (Oken, Isis, 1837: 421–424.) 4°. Leipzig. 1837.

Germar compares the few insects then known from Solenhofen with the tertiary insects, and concludes that: 1°, none of the jurassic species are identical with the living; 2°, there are no strikingly strange forms; 3°, the general facies of the fauna is that of middle Europe and the United States, and indicates a similar climate; 4°, all are wood or leaf eaters, excepting some water beetles and a Geotrupes. This paper appears to have been read before the Jena meeting of the Deutscher naturforscher und ärtzte, in 1836, but I have been unable to consult the report of that meeting.

——— Die versteinerten insecten Solenhofens. (Nova acta acad. leop.-carol., 19, i: 187–222, tab. 21–23.) 4°. Vratislaviæ et Bonnæ, 1839.

Describes and rudely figures seventeen insects of various orders, of which eleven are credited to Münster. The descriptions are preceded by some general remarks, historical and otherwise, upon Solenhofen and other fossil insects.

——— Beschreibung einiger neuen fossile insecten (i.) in den lithographischen schiefern von Bayern und (ii.) in schieferthon des steinkohlengebirges von Wettin. (Münst., Beitr. z. petref., 5: 79–94, taf. 9, 13.) 4°. Bayreuth. 1842.

The first part, pp. 79–90, pl. 9, 13, describes and figures nine insects of various orders from Solenhofen, being the first memoir on the subject. See the same title in Section II.

——— See also **Assmann**, A.

Goss, H. Three papers on fossil insects, and the British and foreign formation in which insect remains have been detected. No. 2. The insect fauna of the secondary or mesozoic period. 8°. [London. 1879.] pp. 37. (Proc. geol. assoc., 6, iii: 116–150.) 8°. London. 1879.

Abstract: The insect-fauna of the secondary or mesozoic period, and the British and foreign strata in which insect remains have been detected. (Geol. mag., (n. s.), 5: 134–136.) 8°. London. 1878.

See same general title in Section II and Section VI, with note in former.

——— Introductory papers on fossil entomology. No. 6. Mesozoic time. On the insecta of the triassic period, and the animals and plants with which they were correlated. (Entom. monthl. mag., 15: 245–246.) 8°. London. 1879.

The same. No. 7, part 1. Mesozoic time. On the insecta of the jurassic period, and the animals and plants with which they were correlated. (Entom. monthl. mag., 16: 7–10.) 8°. London. 1879.

The same. No. 7, part 2. Mesozoic time. On the insecta of the jurassic period and the animals and plants with which they were correlated. (Entom. monthl. mag., 16: 25–29.) 8°. London. 1879.

The same. No. 8. Mesozoic time. On the insecta of the cretaceous period and the animals and plants with which they were correlated. (Entom. monthl. mag., 16: 58–60.) 8°. London. 1879.

See same title in Section I, Section II, and Section VI.

Gray, O. W. See **Walling**, H. F., and **Gray**, O. W.

Hagen, H. A. Fossil insects of the Dacota group. (Nature, 25: 265–266.) 4°. London. 1882.

A brief note recording the discovery of galls and mines in fossil leaves from Kansas and Nebraska.

Hasselt, A. W. M. van. See **Weyenbergh**, H.

Heer, O. 1. [Zwei] geologische vorträge gehalten im März 1852 von Oswald Heer und A. Escher von der Linth. 1. Die lias-insel des Aargau's. [*Entitled on cover:* Ueber die lias-insel im Aargau.] 2. Ueber die gegend von Zürich in der letzten periode der vorwelt, mit einer blockkarte der Schweiz. 4°. Zürich. [1852.] pp. 28, pl. 2.

Heer, O.—Continued.

Heer's portion, pp. 1–15, pl. 1, is largely devoted to insects, the greater part of which are wood-boring Coleoptera, and indicate a warm tropical climate. Twenty-two species are described and figured, of which nineteen are beetles.

——— Die kreide-flora der arctischen zone, gegründet auf die von den schwedischen expeditionen von 1870 und 1872 in Grönland und Spitzbergen gesammelten pflanzen. 4°. Stockholm. 1874. pp. 138, pl. 38. (Kongl. svenska vetensk. akad. handl., 12, vi.)

Insekten der komeschichten, pp. 91–92, pl. 17, describes two Coleoptera. Myriopoden, pp. 120–121, pl. 33, describes Julopsis cretacea.

Forms vol. 3, no. ii, of Heer's Flora fossilis arctica.

——— Flora fossilis helvetica. Die vorweltliche flora der Schweiz. 4°. Zürich. [1876–] 1877. t. p., pp. 6, 182, pl. 70.

Describes, p. 76, and figures, pl. 27, a single beetle from the keuper of Rütihard, canton Basel, and a neuropteron on p. 77, pl. 29, from the trias of Mythen, canton Schwyz.

Hislop, S. On the age of the fossiliferous thin-bedded sandstone and coal of the province of Nágpur, India. (Quart. journ. geol. soc. Lond., 17, i: 346–354.) 8°. London. 1861.

Refers to the discovery of Blattariæ and Coleoptera at Kotá, probably liassic.

——— Supplemental note on the plant-bearing sandstones of central India. (Quart. journ. geol. soc. Lond., 18, i: 36.) 8°. London. 1862.

Discovery of more insects at Kotá.

Hitchcock, Charles Henry. See **Hitchcock**, E.; **Walling**, H. F., and **Gray**, O. W.

Hitchcock, Edward. Ichnology of New England. A report on the sandstone of the Connecticut valley, especially its fossil footmarks, made to the government of the commonwealth of Massachusetts. 4°. Boston. 1858. pp. 12, 220, pl. 60.

Refers to prints, supposed to be those of insects, on pp. 147–160, 165–166, 188–189, and mentions an insect larva, pp. 7–8. The figures of these are distributed on plates 24, 27–31, 42.

——— Supplement to the Ichnology of New England, a report to the government of Massachusetts in 1863. 4°. Boston. 1865. pp. 10, 96, pl. 20.

Appendix B. Descriptive catalogue of the specimens in the Hitchcock ichnological cabinet of

Hitchcock, E.—Continued.
Amherst college, prepared by C. H. Hitchcock, pp. 41–88. Tracks of insects, pp. 13–17; tracks of myriapods, pp. 17–18.

Leidy, Joseph. See **Deane, J.**

Moore, Charles. On the palæontology of the middle and upper lias. (Proc. Somersetsh. archæol. nat. hist. soc., 2: 61–76.) 8°. Taunton. 1865–1866.

His collection of lias insects consists of about 1,000 specimens. "The families represented at Ilminster include Libellula, Neuroptera, Orthoptera, Homoptera, Diptera, and Coleoptera."

Morris, J. On some sections in the oolitic district of Lincolnshire. (Quart. journ. geol. soc. Lond., 9, i: 317–344, pl. 14.) 8°. London. 1853.

Mentions the occurrence of insects on p. 324 and note.

Münster, G. Nachtrag zu dem aufsatze des professor Germar in theil 4, heft 2, dieser zeitschrift über die versteinerungen von Solnhofen. (Teutschl. geogn. geol. dargest., 5: 578–581.) 16°. Weimar. 1828.

Gives a list of the fossils known to him, among which, on p. 579, occurs "10 arten insecten darunter 2 arten libellen." Germar's paper referred to has nothing on insects.

——— Insekten in lias. (Neues jahrb. mineral., 1835: 333.) 8°. Stuttgart. 1835.

Has discovered lias insects in the neighborhood of Brzezina.

——— See also **Germar, E. F.**

Oppenheim, P. Die insectenwelt des lithographischen schiefers in Bayern. (Palaeontogr., 34: 215–247, pl. 30–31.) 4°. Stuttgart. 1888.

Description of about forty-five species, including several new genera; nearly half of them are Coleoptera and the remainder distributed among the other orders excepting Lepidoptera and Diptera. A full discussion of the Rhipidorhabdi and their systematic position closes the paper.

Phillips, John. The neighborhood of Oxford, and its geology. (Oxford essays, 1855: 192–212.) 8°. London. 1855.

A paragraph, p. 204, is given to the insects of the Stonesfield slate.

——— Geology of Oxford and the valley of the Thames. 8°. Oxford. 1871. pp. 24, 523, pl. 17.

Contains, p. 123, fossils of the liassic period; pp. 173–174, fossils of the Stonesfield beds, in both of which insects are referred to.

Redtenbacher, Jos. See **Brauer, F.**, **Redtenbacher, J.**, and **Ganglbauer, L.**

Scudder, S. H. The insects of the triassic beds at Fairplay, Colo. (Mem. Bost. soc. nat. hist., 4: 457–472, pl. 41–42. 4°. Boston. 1890.

Forms pp. 433–448, pl. 33–34, of the Fossil insects of North America, Vol. I. The fauna consists almost exclusively of cockroaches, of which eighteen species of seven genera are described and figured, besides three Hemiptera.

Strickland, Hugh Edwin. On the results of recent researches into the fossil insects of the secondary formations of Britain. (Rep. Brit. assoc. adv. sc., 1845, notices, 58.) 8°. London. 1846.

A general account of what had been published by Brodie, with a few general deductions.

Tate, Ralph, and **Blake**, J. F. The Yorkshire lias. 8°. London. 1876. pp. 12, 475, 12, pl. 19, 4, map.

Class Insecta by J. F. Blake, p. 426, pl. 16 (pars). Figures without description a Buprestites and a Chauliodites.

Walling, Henry F., and **Gray**, O. W. Official topographical atlas of Massachusetts from astronomical, trigonometrical, and various local surveys, compiled and corrected by H. F. Walling and O. W. Gray. Folio. [Boston?] 1871. 100 pp.

The geological description on pp. 17–23 by C. H. Hitchcock, contains, p. 21, a list of Ichnozoa.

Warren, John Collins. Remarks on some fossil impressions in the sandstone of Connecticut River. 8°. Boston. 1854. pp. 54, pl.

On p. 37 he refers some of the impressions as perhaps made "by the feet and bodies of large insects."

Westwood, J. O. Description of the remains of fossil insects from the Purbeck formation of Dorset and Wilts, and from the Stonesfield slate of Gloucestershire. (Quart. journ. geol. soc. Lond., 9, proc., 344.) 8°. London. 1853.

Unpublished; apparently the same as the next.

——— Contributions to fossil entomology. (Quart. journ. geol. soc. Lond., 10: 378–396, pl. 14–18.) 8°. London. 1854.

About one hundred and fifty specimens are figured and fifty-nine species named. They are nearly all from Purbeck strata, about half of them Coleoptera, and the remainder are referred mostly and about equally to Hemiptera, Orthoptera and Neuroptera. The separata have a title on reverse of p. 378.

——— See also **Brodie, P. B.**

Weyenbergh, H. Sur les insectes fossiles du calcaire lithographique de la Bavière, qui se trouvent au Musée Teyler. 8°. Harlem. 1869. t. p., pp. 48, pl. 4. (Arch. mus. Teyl., 2: 247–294, pl. 34–37.) 8°. Harlem. 1869.

Describes forty-eight species, many of them new; preceded by a list of the sixty previously known jurassic hexapods, and followed by five pages of general considerations.

——— Prodromus en algemeene beschouwing der fossiele insekten van Beijeren. 8°. ['s Gravenhage.] 1869. pp. 19. (Tijdschr. entom., (2), 4: 230–248.) 8°. 's Gravenhage. 1869.

A list of one hundred and four insects is given, followed by general remarks, including, pp. 12–14 (241–243), a comparison of the secondary insects of England and Bavaria; pp. 231–234 are printed 131–134.

——— Notes sur quelques insectes du calcaire jurassique de la Bavière. 8°. Harlem. 1873. t. p., pp. 7. (Arch. mus. Teyl., 3: 234–240.) 8°. Harlem. 1873.

Further discussion of the affinities of four species included in the preceding paper, especially of Hasseltides primigenius (with the opinions of van Hesselt on this species) and of Sphinx snelleni.

——— Varia zoologica et palæontologica. (Periód. zool., org. soc. entom. argent., 1: 77–111, lam. 2–3.) 8°. Buenos Aires. 1874.

Weyenbergh, H.—Continued.

"Insectes fossiles," pp. 81–107, lam. 3, includes descriptions and discussion of a half-dozen Solenhofen insects, of which two or three are new, followed by the list mentioned under the next entry, and a list, p. 107, of the secondary insects of Bavaria not represented in the Musée Teyler.

——— Énumération systématique des espèces qui forment la faune entomologique de la période mésozoïque de la Bavière; en même temps Supplément du Catalogue de la collection paléontologique du Musée Teyler. 8°. [Buenos Aires, 1874.] pp. 20. (Periód. zool., org. soc. entom. argent., 1: 87–106.) 8°. Buenos Aires. 1874.

Contains two hundred and sixty-five numbers, of which about thirty are undetermined; full references to descriptions and illustrations are added.

——— Sur les chenilles fossiles. (Pet. nouv. entom., vol. 2, no. 202, p. 253.) 4°. Paris. 1878.

A note calling attention to the caterpillar of the jurassic Sphinx snelleni previously described by him.

Wyman, Jeffries. See **Deane**, J.

Yxem, E. Versteinerte insecten-zellen. (Ber. naturw. ver. Harzes, 1840–46, 2e aufl., p. 26.) 4°. Wernigerode. 1856.

Exhibition of drawings of insect cells like beecomb from jurassic (?) beds at Chausseebau near Harsleben.

V.—SPECIAL FOR MESOZOIC TIME.

Va.—Mesozoic Myriapoda.

⁂ See under Section I and Section IV, there being no separate titles under this head.

Vb.—Mesozoic Arachnida.

⁂ See also under Section I and Section IV.

Kundmann, Johann Christian. Rariora naturæ et artis, item in re medica, oder Seltenheiten der natur und kunst des kundmannischen naturalien-cabinets, wie auch in der arzneywissenschaft. f°. Breslau und Leipzig. 1737. 2 t. p., ff. (8), col. 1312 (=ff. 328), ff. (17), portr., figs., pl. 17.

Contains, col. 229–236, tab. 12, figs. 13–14, art. 28: Von einem geglaubten und wahren spinnen-steine, in which supposed spiders from the jurassic rocks of Eichstädt are figured.

Meyer, C. E. H. von. Vogel-federn und Palpipes priscus von Solenhofen. (Neues jahrb. mineral., 1861: 561.) 8°. Stuttgart. 1861.

A brief notice of seven new specimens of Palpipes, then regarded as an arachnid.

——— Zu Palpipes priscus aus dem lithographischen schiefer in Bayern. (Palaeontograph., 10: 299–304, taf. 50, figs. 1–4.) 4°. Cassel. 1863.

A detailed description of this supposed arachnid from several specimens.

Roth, Johann Rudolph. Ueber fossile spinnen des lithographischen schiefers. (Gel. anz. bay. akad. wiss., 32: 164–167, fig.) 4°. München. 1851. (Neues jahrb. mineral., 1851: 375–377, pl. 4 B, fig. 8.) 8°. Stuttgart. 1851.

Roth, J. R.—Continued.

Describes two species of a new genus, Palpipes, regarded as an arachnid.

Seebach, K. von. Ueber fossile phyllosomen von Solenhofen. (Zeitschr. deutsch. geol. gesellsch., 23: 340–346, pl. 8.) 8°. Berlin. 1873.

Shows that Phalangites or Palpipes is a crustacean, and not, as formerly supposed, an arachnid.

Vc.—Mesozoic Neuroptera.

⁂ See also under Section I and Section IV.

Brauer, F. Verzeichniss der bis jetzt bekannten neuropteren im sinne Linné's. pp. 90. 8°. [Wien.] [n. d.] (Verhandl. k. k. zool.-bot. gesellsch. Wien, 18: 359–416, 711–742.) 8°. Wien. 1868.

Includes the fossil genera and species, and contains, p. 738 (86), a list of the fossil Libellulina.

Brodie, P. B. Notice on the discovery of a dragon-fly and a new species of Leptolepis in the upper lias near Cheltenham, with a few remarks on that formation in Gloucestershire. 8°. pp. 4, pl. (Quart. journ. geol. soc. Lond., 5, proc., 31–37, pl. 2.) 8°. London. 1848.

The description (2 pp.) is by Westwood, but the name, Libellula (Heterophlebia) dislocata, is by Brodie. The rest of the paper is on the geology of the district. I have not seen the separate paper.

Buch, Christian Leopold von. See **Erichson**, W. F.

Buckland, W. On the discovery of a fossil wing of a neuropterous insect in the Stonesfield slate. (Proc. geol. soc. Lond., 2: 688.) 8°. London. 1838. (Lond. Edinb. Dubl. phil. mag., (3), 13: 388.) 8°. London. 1838.

Brief notice of Hemerobioides giganteus.

ABSTRACT: Découverte d'une aile fossile d'insecte névroptère dans les schistes de Stonesfield. (Rev. zool., 1839: 29.) 8°. Paris. 1839.

Abstract by Malepeyre.

Buckman, J. Remarks on Libellula brodiei (Buckman), a fossil insect from the upper lias of Dumbleton, Gloucestershire. (Ann. mag. nat. hist., (2), 12: 436–438.) 8°. London. 1853.

Claims Æschna brodiei, Libellula (Heterophlebia) dislocata, and Agrion buckmani to be one insect which should bear the name in title.

Charpentier, Toussaint von. Libellulinæ europææ descriptæ ac depictæ cum tabulis 48 coloratis. 4°. Lipsiæ. 1840. t. p., pp. 181, pl. 48.

Under the section De libellulinis petrefactis, pp. 170–173, pl. 48, the author gives a résumé of what was then known on the subject, and describes and figures some new forms. All mentioned are from the secondary rocks. In the explanation of the plates, p. 180, he speaks of fig. 1 as Libellulites solenhofensis, which Kirby has wrongly quoted as a specific term, but which the context shows was merely meant to designate its source.

Dale, James Charles. Notes on some libellulæ. (Ann. mag. nat. hist., 9: 257–258.) 8°. London. 1842.

Suggests that "Æshna liassina" Strickland is nearer Cordulegaster or Petalura.

Dana, J. D. Fossil larvæ in the Connecticut River sandstone. (Amer. journ. sc. arts, (2), 33: 451–452.) 8°. New Haven. 1862.

Quotes an opinion from Dr. J. L. Leconte that Hitchcock's figure of Mormolucoides articulatus resembles the larva of an ephemerid; and the consequent wish of Dr. E. Hitchcock that the name should be changed to Palephemera mediæva.

Eichwald, Édouard d'. Sur un terrain jurassique à poissons et insectes d'eau douce de la Sibérie orientale. (Bull. soc. géol. France, (2), 21: 19–25.) 8°. Paris. 1864.

Describes Ephemeropsis trisetalis, pp. 21–22. The deposit was thought by Müller to be Eocene.

TRANSLATION: On a jurassic deposit containing fresh-water fish and insects in Eastern Siberia. (Quart. journ. geol. soc. Lond., 20, ii: 21–22.) 8°. London. 1864.

An abstract by R[alph] T[ate].

——— Ueber fossile insecten und belemniten. (Amtl. ber. vers. deutsch. naturf., 39: 169–172.) 4°. Giessen. 1865.

Notices, p. 170, the ephemerid larva described by him as Ephemeropsis, found in calcareous schists on the banks of the Turga in Siberia.

——— Lethæa rossica, ou Paléontologie de la Russie décrite et figurée. Text, 8°. Atlas, 4°. 3 v. Stuttgart. 1853–68. Vol. 1. Ancienne période (in 2 parts), pp. 1–19, 17–26, 1–681, 681–1657+titles to parts. 1860. Atlas. t. p., pp. 8, tab. 59. 1859.—Vol. 2. Période moyenne (in 2 parts), pp. 1–35, 1–640, 641–1304+titles to parts. 1865, 1868. Atlas. t. p., tab. 40, expl. of plates opp. plates. 1868.—Vol. 3.

Eichwald, E. d'.—Continued. Période moderne, pp. 19, 533. 1853. Atlas. t. p., pp. 4, tab. 14, expl. of plates opp. plates. 1853.

The few insects are contained in vol. 2, ii, pp. 1191–1195, tab. 37 (1868).

Erichson, Wilhelm Ferdinand. Zur abbildung der libelle von Solenhofen. (Buch, Jura in Deutschl., p. 135, pl. (3). Abhandl. kön. akad. wiss. Berlin, 1837, phys. abhandl.) 4°. Berlin. 1839.

Considers the insect figured by von Buch as partaking of the characters of the genera Æschna and Libellula. It was afterwards named Anax buchi by Hagen.

Fritsch, A. Palaeontologische untersuchungen der einzelnen schichten in der böhmischen kreideformation. (Archiv naturw. landesdurchf. Böhmen, bd. 1, sect. 2, pp. 181–256, pl. 3.) 8°. Prag. 1869.

Refers on p. 187 to the discovery of an elytron of a beetle, and a tube of a phryganid larva in clay schists at Kounic.

Germar, E. F. See **Hagen**, H. A.

Giebel, C. G. Zur fauna des lithographischen schiefers von Solenhofen. (Zeitschr. gesammt. naturw., 9 : 373–388, taf. 5–6.) 8°. Berlin. 1857.

Contains long descriptions and figures of two dragon-flies.

——— Eine neue Æschna aus den lithographischen schiefer von Solenhofen. (Zeitschr. gesammt. naturw., 16: 127-131, taf. 1.) 8°. Berlin. 1860.

Describes very fully Æschna wittei.

Hagen, H. A. Ueber die fossile odonate Heterophlebia dislocata Westwood, nebst abbildung. (Stett. ent. zeit., 10 : 226–231, pl. 1.) 16°. Stettin. 1849.

An extended description, showing that it represents a new genus of Gomphidæ. Dr. Hagen informs me that the most important vein is given in the wrong place by the lithographer.

——— A comparison of the fossil insects of England and Bavaria. (Entomol. annual, 1862, pp. 1–10.) 16°. London. 1862.

Devoted almost exclusively to a comparison of the Neuroptera of the Bavarian Jura and the English lias-insects, by which he concludes the two faunas to be "extremely closely allied," and to be very different from the tertiary or existing forms.

Hagen, H. A.—Continued.

——— Comparison of fossil insects of England and Bavaria. (Report Brit, assoc. adv. sc., 31, notices, 113–114.) 8°. London. 1862.

Dealing mostly with Odonata. The same given more fully in the Entom. annual. See preceding entry.

——— Ueber die neuroptern aus dem lithographischen schiefer in Bayern. (Palaeontogr., 10: 96–145, taf. 13–15.) 4°. Cassel. 1862.

An introduction of nine pages, containing besides other interesting matter the comparison of the mesozoic insects of England and Bavaria given the previous year in England (see the preceding entries), is followed by a list of thirty-seven species, mostly Odonata, found at Solenhofen and Eichstädt, by five pages of a review of earlier writers, especially Germar, and by the extended description of twenty-four species, pp. 114–145.

——— Notes on Tarsophlebia westwoodii Giebel, a fossil dragon-fly. (Entom. monthl. mag., 1: 160–161.) 8°. London. 1864.

Heterophlebia believed to belong to the Gomphidæ, Tarsophlebia to the Calopterygidæ. The latter differs from all living Odonata in the length of the first tarsal joint.

——— Die Neuroptera des lithographischen schiefers in Bayern. Pars 1: Tarsophlebia, Isophlebia, Stenophlebia, Anax. 4°. Cassel. 1866. pp. 40, taf. 4. (Palaeontogr., 15 : 57–96, taf. 1–4.) 4°. Cassel. 1866.

Extended generic and specific descriptions of eight dragon-flies.

Herold, Johann Moritz David. See **Koehler**, F.

Hessel, Johann Friedrich Christian. See **Koehler**, F.

Hitchcock, E. See **Dana**, J. D.

Joly, Nicolas. Incontestablement, le Prosopistoma de Latreille est un éphémérien. (Mém. acad. sc. Toulouse, (8), 2: 188–189.) 8°. Toulouse. 1880.

At the end of his paper, p. 189, he refers to this genus a secondary fossil figured by Brodie.

Kirby, W. F. See **Charpentier**, T. von.

Koehler, Friedrich. Ueber den libellulit von Solenhofen. (Zeitschr. f. mineral. [Taschenb. ges. mineral., jahrg. 20] bd. 2: 231–233, pl. 7, fig. 3.) 16°. Frankfurt a. M. 1826.

With note by Hessel giving the opinion of Herold. The insect is referred to Æschna.

Koehler, F.—Continued.

TRANSLATION: Account of a libellulite found at Solenhofen. (Edinb. new phil. journ., 2: 195, pl. 3, fig. 4.) 8°. Edinburgh. 1826.

The note is not appended.

LeConte, J. L. See also **Dana**, J. D.

Linden, Pierre Léonard van der. Notice sur une empreinte d'insecte, renfermée dans un échantillon de calcaire schisteux de Sollenhoven, en Bavière. 4°. (Bruxelles. 1827.) pp. 9, pl. (Nouv. mém. acad. roy. sc. Brux., 4: 245–253, pl.) 4°. Bruxelles. 1827.

Describes and figures Æschna antiqua.

Malepeyre. See **Buckland**, W.

Müller, Johannes. Fossile fische. (Middendorff's Sibirische reise, 1, i: 259–263, pl. ii.) 4°. St. Petersburg. 1848.

Refers in three lines, p. 261, to the ephemerid larva found by Middendorff, which is figured pl. 11, fig. 7.

Packard, A. S. [On insect-remains occurring in nodules . . . north of Turner's Falls.] (Bull. Essex inst., 3: 1–2.) 8°. Salem. 1871.

Considers Palephemera mediæva an aquatic coleopterous insect "belonging perhaps near the family Heteroceridæ."

Phillips, J. Oxford fossils; No. 2. (Geol. mag., 3, 97–99, pl. 6.) 8°. London. 1866.

Describes and figures Libellula westwoodii from the Stonesfield slate, and compares it with Æschna brodiei from the lias.

Schmidel, Kasimir Christoph. Fortgesezte vorstellung einiger merkwürdigen versteinerungen mit kurzen anmerkungen versehen. 4°. Nürnberg. 1782. t. p., pp. 45, pl. 8–24.

Describes, p. 36, and figures, pl. 19, fig. 2, a dragon-fly from Solenhofen, which he compares with Libella grandis.

Scudder, S. H. On Mormolucoides articulatus. (Proc. Bost. soc. nat. hist., 11: 140.) 8°. Boston. 1867.

Considers this triassic species to be a coleopterous larva.

———. The oldest known insect larva, Mormolucoides articulatus, from the Connecticut River rocks. (Mem. Bost. soc. nat. hist., 3: 431–438, pl. 45.) 4°. Boston. 1886.

Forms vol. i, pp. 323–330, pl. 19, of the Fossil insects of North America.

Mormolucoides regarded as the larva of a sialid neuropteron.

Selys-Longchamps, M. E. de. Synopsis des Agrionines, 5me légion: Agrion (suite et fin). Les genres Telebasis, Argiocnemis et Hemiphlebia. 12°. Bruxelles. 1877. 65 pp. (Bull. acad. sc. Belg., (2), 43: 97–159.) 12°. Bruxelles. 1877.

On p. 64 under the description of Hemiphlebia, he compares its structure with Tarsophlebia from the Jura.

——— Palaeophlebia, nouvelle légion de caloptérygines. 8°. Bruxelles. 1889. pp. 7. (Ann. soc. ent. Belg., 33, comptes rendus, 153–158, pl. 2.) 8°. Bruxelles. 1889.

Refers to it Heterophlebia, Stenophlebia, and a living Japanese form.

Strickland, H. E. On the occurrence of a fossil dragon-fly in the lias of Warwickshire. 8°. [London.] 1840. pp. 2, figs. 1–3. (Mag. nat. hist., (n. s.), 4: 301–302, figs. 11–13.) 8°. London. 1840.

Description of "Æshna liassina."

Tate, R. See **Eichwald**, E. d'.

Westwood, J. O. See **Brodie**, P. B.

White, Charles Abiathar. Report on the paleontological field work for the season of 1877. (Ann rep. U. S. geol. surv. terr., 11, 161–272.) 8°. Washington. 1879. [1880.]

Contains a notice of Corydalites fecundum and its geological position.

Woodward, H. On the wing of a neuropterous insect from the cretaceous limestone of Flinders River. North Queensland, Australia. (Geol. mag., (3), 1: 337–339, pl. 11, fig. 1.) 8°. London. 1884.

Describes and figures Æschna flindersiensis.

Vd.—Mesozoic Orthoptera.

⁂ See also under Section I and Section IV.

Heyden, Carl von. Chrysobothris veterana und Blabera avita, zwei fossile insekten von Solenhofen. (Palaeontogr., 1: 99–101, pl. 12, fig. 4–5.) 4°. Cassel. 1847.

Simple description. See same title in Section V*f*.

Scudder, S. H. Triassic insects from the Rocky Mountains. (Amer. journ. sc., (3), 28: 199–203.) 8°. New Haven. 1884.

General account of the cockroaches found near Fairplay, Col., and their relation to older and to modern types.

Scudder, S. H.—Continued.

——— Notes on mesozoic cockroaches. I. Pterinoblattina, a remarkable type of Palæoblattariæ; II. Triassic Blattariæ from Colorado; III. On the genera hitherto proposed for mesozoic Blattariæ. (Proc. acad. nat. sc. Philad., 1885: 105-115.) 8°. Philadelphia. 1885.

The genera Pterinoblattina (with 6 sp.), Neorthroblattina (4 sp.), and Scutinoblattina (3 sp.), are described, and the old genera Blattidium, Elisama, Rithma, and Mesoblattina characterised.

——— A review of mesozoic cockroaches. (Mem. Bost. soc. nat. hist., 3: 439-485, pl. 46-48.) 4°. Boston. 1886.

Forms vol. 1, pp. 331-376, pl. 20-22, of the Fossil insects of North America.

Thirteen genera and seventy-nine species, many, especially British, species new.

Ve.—Mesozoic Hemiptera.

⁂ See also under Section I and Section IV.

Buckton, G. B. Monograph of the British Aphides. 4 vol. 8°. London, 1875-1883.

See same title in Section I and Section VII*e*.

Butler, Arthur Gardiner. On fossil butterflies. 4°. [London, 1873.] pp. 126-128. pl. 48. (Butl., Lepid. exot., part xv, pp. 126-128, pl. 48.) 4°. London. 1873.

Description and illustration of three species, including for the first time Palæontina oolitica. The figure of the latter was copied into the Graphic, of Feb. 22, 1873, with a brief account of it, under the title: "The oldest fossil butterfly in the world." A similar account appeared in Hardw. sc. gossip, 1873: 260-261, under the title: "The oldest fossil butterfly."

——— Notes on the impression of Palæontina oolitica in the Jermyn street museum. The cover entitled: On a fossil butterfly in the Museum of practical geology, Jermyn street. 8°. [London. 1874.] pp. 4, pl. (Geol. mag., dec. 2, vo. 11, pp. 446-449, pl. 19.) 8°. London. 1874.

A rejoinder to Scudder, and in favor of the lepidopterous character of Palæontina.

Scudder, S. H. [On an English fossil insect described as lepidopterous.] (Proc. Bost. soc. nat. hist., 16: 112.) 8°. Boston. 1874.

Considers Palæontina oolitica Butler as homopterous rather than lepidopterous. See also Butler, A. G.

Vf.—Mesozoic Coleoptera.

⁂ See also under Section I and Section IV.

Brodie, P. B. Notice of the occurrence of an elytron of a coleopterous insect in the Kimmeridge clay at Ringstead Bay, Dorsetshire. (Quart. journ. geol. soc. Lond., 9, proc., 51-52.) 8°. London. 1853.

No further details of the insect than are given in the title.

Brongniart, C. J. E. Rapport sur un morceau de bois fossile trouvé dans le gault, terrain crétacé de Lottinghem (Pas-de-Calais). (Ann. soc. ent. France, (5), 6, bull. ent., 117-118.) 8°. Paris. 1876.

Refers the borer reported by Lartigue to Bostrychus. See also Lartigue.

——— Note sur des perforations observées dans deux morceaux de bois fossile. (Ann. soc. ent. France, (5), 7: 215-220, pl. 7, ii.) 8°. Paris. 1877.

Describes the borings of a xylophagid allied to Bostrychus. Noticed by Dr. Hector George in the Feuilleton of Le constitutionnel for 21 Nov., 1877. See also Girard, M. See same title in Section III*f*.

Conybeare, William Daniel, and **Phillips**, William. Outlines of the geology of England and Wales, with an introductory compendium of the general principles of that science and comparative views of the structure of foreign countries; illustrated by a coloured map and sections, etc. Part 1. [all publ.] 8°. London. 1822. pp. (8), 61, (1), 470, map, tables, pl. of sections.

Brief mention of the coleopterous remains in the calcareous slate of Stonesfield (oolite) will be found on pp. 207-209.

Fritsch, A. Palaeontologische untersuchungen der einzelnen schichten in der böhmischen kreideformation. (Archiv naturw. landesdurchf. Böhmen, 1, ii: 181-256, pl. 3.) 8°. Prag. 1869.

Refers on p. 187 to the discovery of an elytron of a beetle, and a tube of a phryganid larva in clay schists at Kounic.

——— Dva noví brouci z českého útvaru křídového. (Vesmír, 18: 8, fig. 5.) 4°. [v. Praze.] 1888.

Describes and figures, much enlarged, two Coleoptera referred to the genera Lamiites and Velenovskya. A brief list of the nine species recognized in the Bohemian chalk is added.

Geinitz, H. B. Charakteristik der schichten und petrefacten des sächsischen kreidegebirges. 4°. 1839–42. Dresden und Leipzig. pp. 4, 116, 26, pl. A, 24.

Under the head of Insecten, pp. 12–13, *taf.* 3–6, are described and figured borings of insects which the author, supported by Reichenbach and Germar, refers to Cerambycidæ, and describes under the generic appellation Cerambycites. Dr. Geinitz now informs me that these belong to Gastrochæna amphisbæna Goldf., a burrowing mollusk.

George, H. See **Brongniart**, C. J. E.

Germar, E. F. See **Geinitz**, H. B.

G[irard], M. Les perforations des bois fossiles. (La nature, 6: 112, figs. 1–6.) 4°. Paris. 1878.

Popular account of Brongniart's two papers on the subject, with figures. See same title in Section III *f*.

Heer, O. Beschreibung der angeführten pflanzen und insekten. 4°. n. p., n. d. pp. 21, taf. (3). (Escher v. d. Linth, Geologische bemerkungen über das nördliche Voralberg und einige angrenzenden gegenden. pp. 115–135, taf. 6–8.) (Neue denkschr. allg. schweiz. gesellsch. gesammt. naturw., 13.) 4°. Zürich. 1853.

B. Insekten, pp. 18–21 (133–135), *taf.* 7. Describes two beetles from the trias of Vadutz.

——— Beiträge zur jura flora Ostsibiriens und des Amurlandes. t. p., pp. 122, pl. 31. (Mém. acad. imp. sc. St. Pétersb., (7), 22, xii.) 4°. St.-Pétersbourg. 1876.

Elaterites sibiricus is described on p. 41.

Forms vol. 4, no. ii, of Heer's Flora fossilis arctica.

——— Ueber einige insektenreste aus der raetischen formation Schonens. (Förhandl. geol. fören. Stockh., 4, vii: 192–197, taf. 13.) 8°. Stockholm. 1878.

Description and figures of eight Coleoptera.

Heyden, C. von. Chrysobothris veterana und Blabera avita, zwei fossile insekten von Solenhofen. (Palaeontogr., 1: 99–101, pl. 12, fig. 4–5.) 4° Cassel. 1847.

Simple description. See same title in Section V*d*.

Lartigue. Échantillons de bois fossiles provenant du gault de Lottinghen. (Ann. soc. ent. France, (5), 6, bull. ent., 107.) 8°. Paris. 1876.

Exhibition of fossil wood perforated by insects, afterward reported on by Brongniart, C. J. E. (q. v.)

Linné, C. von. Wästgöta resa på riksens högloflige ständers befallning förrättad år 1746. Med anmärkningar uti oeconomien, naturkunnogheten, antiquiteter, inwårnarnes seder och lefnads-sätt, med tilhörige figurer. 16°. Stockholm. 1747. pp. (12), 284, (19), pl. 5.

Refers, on p. 24, to finding beetles in the limestone of Kinnekulle.

TRANSLATION: Reisen durch Westgothland, welche auf befehl der hochlöblichen reichsstände des königreichs Schweden im jahr 1746 angestellt worden. 8°. Halle. 1765. pp. (20), 318, pl. 7.

Not seen. The same (probably) is found on p. 30.

Mantell, G. A. Notes on the wealden strata of the Isle of Wight, with an account of the bones of iguanodons and other reptiles discovered at Brook Point and Sandown Bay. (Quart. journ. geol. soc. Lond., 2, i: 91–96.) 8°. London. 1846.

In the closing paragraphs brief reference is made to elytra of "two or more species of Coleoptera" at Wateringbury.

——— A brief notice of organic remains recently discovered in the wealden formation. (Quart. journ. geol. soc. Lond., 5: 37–43, pl. 3.) 8°. London. 1849.

A brief notice, p. 39, of elytra of Coleoptera from the "fresh-water strata above the oolite in Buckinghamshire;" two of these are figured in detail, but no suggestion is made of their affinities.

Moore, C. On the zones of the lower lias and the Avicula contorta zone. (Quart. journ. geol. soc. Lond., 17, i: 483–516, pl. 15–16.) 8°. London. 1861.

On p. 513 mentions the occurrence of Carabidæ at Vallis.

Phillips, W. See **Conybeare**, W. D., and **Phillips**, W.

Prévost, Constant. Observations sur les schistes calcaires oolitiques de Stonesfield en Angleterre, dans lesquels ont été trouvés plusieurs ossemens fossiles de mammifères. (Ann. sc. natur., 4: 389–417, pl. 17–18.) 8°. Paris. 1824.

Refers merely, p. 393, and in explanation of plates, p. 417, to elytra of a Buprestis? figured pl. 18, fig. 26.

Reichenbach, Heinrich Gottlieb Ludwig. See **Geinitz**, H. B.

Roemer, F. Notiz über ein vorkommen von fossilen käfern (coleopteren) im rhät bei Hildesheim. (Zeitschr. deutsch. geol. gesellsch., 28: 350-353, figs.) 8°. Berlin. 1876.

Describes and figures three species of Coleoptera, of which one is not named.

Westwood, J. O. [Exhibition of a fossil beetle from Stonesfield.] (Trans. ent. soc. Lond., 4, journ. of proc., 40.) 8°. London. 1841.

Regards the elytra figured by Buckland (pl. 46'', figs. 4-9) as prionideous, not buprestideous.

Vg.—Mesozoic Diptera.

* * * See under Section I and Section IV, there being no separate titles under this head.

Vh.—Mesozoic Lepidoptera.

* * * See also under Section I, Section IV, and Section V*e*.

Saporta, G. de. [Lettre à M. de Selys-Longchamps.] (Compt. rend. soc. ent. Belg., (2), xxiii: 8.) 8°. Bruxelles. 1876. (Ann. soc. ent. Belg., 19: 4.) 8°. Bruxelles. 1876.

Lepidoptera could not have appeared before phanerogamous flowers. See also Section III*d*.

Vi.—Mesozoic Hymenoptera.

* * * See under Section I and Section IV, there being no separate titles under this head.

VI.—GENERAL FOR CENOZOIC TIME.

* * * See also under Section I.

Aldrovandus, U. Mvsaevm metallicvm in libros IIII distribvtvm. f°. Bononiæ. 1648. t. p., ff. 2, pp. 979, (13).

Cap. 18, De svccino, sev electro, pp. 403-418, refers briefly to insect inclusa on p. 406, under the side heading Quae animantes in svccino sint.

[**Argenville**, Ant. Jos. Desallier, d'.] L'histoire naturelle éclaircie dans une de ses parties principales, l'oryctologie, qui traite des terres, des pierres, des métaux, des minéraux et autres fossiles, ouvrage dans lequel on trouve une nouvelle méthode latine et françoise de les diviser, et une notice critique des principaux ouvrages qui ont paru sur ces matières. Enrichi de figures dessinées d'après nature. Par M. * * * des Sociétés royales des sciences de Londres et de Montpellier. 4°. Paris. 1755. pp. (8) 16, 562, pl. 26.

Mentions some fossil insects on pp. 83, 353; and on p. 360, pl. 21, refers to what is called a "chenille" and "deux papillons."

Assmann, A. Palaeontologie. Beiträge zur insekten-fauna der vorwelt.—Einleitung. I. Beitrag. Die fossilen insekten des tertiären (miocenen) thonlagers von Schossnitz bei Kanth in Schlesien. II. Beitrag. Fossile insekten aus der tertiären (oligocenen) braunkohle von Naumburg am Bober. Mit einer tafel abbildungen. 8°. Breslau. 1869. pp. 1-62, taf. 1. (Zeitschr. entom. ver. schles. insektenk., (2) 1.),

The first paper contains an account of the geology and paleontology of Schossnitz with full descriptions of ten species of insects.

See same title in Section I and Section VI*f*.

Aurifaber, Andr. Succini historia, oder Bericht woher der agt- oder bornstein ursprünglich komme. 4°. Königsberg. 1551.

Not seen. Dr. Hagen informs me that it contains references to insects in amber, and is therefore one of the earliest works mentioning them. He thinks, indeed, that Münster's earlier mention of them may have been due to information received direct from Aurifaber; both were disciples of Luther. Later editions were published in 1557 and 1572 in 4°, and, rendered into Latin verse by Scholzius, in 1593 and 1671 in 8°.

Aycke, Johann Christian. Fragmente zur naturgeschichte des bernsteins. 16°. Danzig. 1835. pp. 8, 107.

Contains a section: In bernstein eingeschlossene organische gegenstände, pp. 58-64, where the author states that insects occur most frequently in transparent amber and in such as shows a concentric structure; oftener also in amber brought up from the sea and only rarely in that dug from the earth. He also criticises various authors and especially Schweigger for confounding copal and other gums with amber.

Aymard, Auguste. La découverte d'un assez grand nombre d'insectes dans les

Aymard, A.—Continued.
marnes subordonnées à la formation gypseuse près du Puy. (Bull. soc. géol. France, 6: 235–236. 8°. Paris. 1835.

A brief announcement with a consideration of its geological import.

——— Rapport sur les collections de M. Pichat-Dumazel. (Cong. scient. France, sess. 22: 42.) 8°. Le Puy. 1854.

Not seen; quoted from Oustalet. Names, but neither describes nor figures, seven insects from Le Puy, of which three belong to Coleoptera, three to Diptera and one to Neuroptera.

Ballenstedt [Johannes Georg Justus]. Entdeckung von insekten-nestern der urwelt im bernstein. (Archiv neuest. entd. urw., 5: 28–40.) 8°. Quedlinburg und Leipzig. 1823.

A very full abstract of Troost's paper, with comments.

Bargagli, Piero. Di tre opuscoli sugli insetti fossili e sulle formazioni inglesi e stranieri nelle quali sono stati scoperti avanze d'insetti, pubblicati da H. Goss (Bull. soc. ent. ital., 12: 127–138.) 8°. Firenze. 1880.

A very full abstract of the first of Goss's series of three papers (q. v.).

Bassi, Carlo Agostino. Memorie intorno allo studio degl' insetti fossili in genere. (Atti reun. scienz. ital., 3: 400–401.) 4°. Firenze. 1841.

An account of three or four insects from Sinigaglia in the Milan museum, to only one of which a name—Cleonolithus antiquus—is given. None of them are properly described.

An abstract entitled "Ueber die wichtigkeit des studiums der fossilen knochen [kerfen?] für die geologie" will be found in Oken's Isis, 1843, pp. 418–419. 4°. Leipzig. 1843.

Beck [H.] Notes on the geology of Denmark. (Proc. geol. soc. Lond., 2: 217–220.) 8°. London. 1836. (Lond. Edinb. phil. mag., (3), 8: 553–556.) 8°. London. 1836.

Contains a paragraph relating to tertiary deposits of Jutland "older than the erratic blocks" and containing "the elytra of beetles, the cases of the larvæ of Phryganæa, and a hymenopterous insect which the author has called Cleptis steenstrupii."

Bell, Alfred. Post-glacial insects (Entom., 21: 1–2). 8°. London. 1888.

Concludes with a list of Coleoptera 26 sp., Hemiptera 1, Diptera 1, and Neuroptera 2, from peat in England.

Berendt, Georg Carl. Die insekten im bernstein. Ein beitrag zur thiergeschichte der vorwelt. 1es heft. 4°. Danzig. 1830. pp. (2), 39.

Only pp. 29–39 deal with the insects themselves, and the remarks are of a very general nature, but give the first published information concerning amber insects based on considerable collections. Hagen (Bibl. ent., 1: 42) records plates to a second part.

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Bock, Friedrich Samuel. Versuch einer kurzen naturgeschichte des preussischen bernsteins und einer neuen wahrscheinlichen erklärung seines ursprunges. 16°. Königsberg. 1767. pp. 146.

Gives on pp. 138-146 a list of some insects and other animals found in amber.

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Mentions in general terms (pp. 233-234) the insects most commonly found in amber.

Bruckmann, A. E. Flora oeningensis fossilis. Die oeninger steinbrüche, das sammeln in denselben und die bis jetzt dort gefundenen pflanzenreste. (Jahresb. ver. vaterl. naturk. Württemb., 6: 215-238.) 8°. Stuttgart. 1850.

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Brydone. Patrick. A tour through Sicily and Malta, in a series of letters to

Aymard, A.—Continued.
marnes subordonnées à la formation gypseuse près du Puy. (Bull. soc. géol. France, 6: 235–236. 8°. Paris. 1835.

A brief announcement with a consideration of its geological import.

——— Rapport sur les collections de M. Pichat-Dumazel. (Cong. scient. France, sess. 22: 42.) 8°. Le Puy. 1854.

Not seen; quoted from Oustalet. Names, but neither describes nor figures, seven insects from Le Puy, of which three belong to Coleoptera, three to Diptera and one to Neuroptera.

Ballenstedt [Johannes Georg Justus]. Entdeckung von insekten-nestern der urwelt im bernstein. (Archiv neuest. entd. urw., 5: 28–40.) 8°. Quedlinburg und Leipzig. 1823.

A very full abstract of Troost's paper, with comments.

Bargagli, Piero. Di tre opuscoli sugli insetti fossili e sulle formazioni inglesi e stranieri nelle quali sono stati scoperti avanze d'insetti, pubblicati da H. Goss (Bull. soc. ent. ital., 12: 127–138.) 8°. Firenze. 1880.

A very full abstract of the first of Goss's series of three papers (q. v.).

Bassi, Carlo Agostino. Memorie intorno allo studio degl' insetti fossili in genere. (Atti reun. scienz. ital., 3: 400–401.) 4°. Firenze. 1841.

An account of three or four insects from Sinigaglia in the Milan museum, to only one of which a name—Cleonolithus antiquus—is given. None of them are properly described.

An abstract entitled "Ueber die wichtigkeit des studiums der fossilen knochen [kerfen?] für die geologie" will be found in Oken's Isis, 1843, pp. 418–419. 4°. Leipzig. 1843.

Beck [H.] Notes on the geology of Denmark. (Proc. geol. soc. Lond., 2: 217–220.) 8°. London. 1836. (Lond. Edinb. phil. mag., (3), 8: 553–556.) 8°. London. 1836.

Contains a paragraph relating to tertiary deposits of Jutland "older than the erratic blocks" and containing "the elytra of beetles, the cases of the larvæ of Phryganæa, and a hymenopterous insect which the author has called Cleptis steenstrupii."

Bell, Alfred. Post-glacial insects (Entom., 21: 1–2). 8°. London. 1888.

Concludes with a list of Coleoptera 26 sp., Hemiptera 1, Diptera 1, and Neuroptera 2, from peat in England.

Berendt, Georg Carl. Die insekten im bernstein. Ein beitrag zur thiergeschichte der vorwelt. 1es heft. 4°. Danzig. 1830. pp. (2), 39.

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Brydone. Patrick. A tour through Sicily and Malta, in a series of letters to

Brydone, P.—Continued.
William Beckford, Esq., of Somerly in Suffolk. A new edition. 2 vols. 8°. London. 1776. vol. 1, map, pp. 16, 373; —vol. 2, pp. 11, 355.

Vol. 1, pp. 282-284 contains a short account of the amber found at the mouth of the Giaretta containing "flies and other insects." The first edition was published in 1774; another in 1775; another with precisely the same pagination as in the one quoted, in 1790; another in 1806; a French translation in 1775 at Paris, and in 1819 at Frankfort; and a German translation in 1777 at Leipzig.

Burmeister, H. Kerfe der urwelt. (Burm., Handb. d. ent., 1: 632-640.) 8°. Berlin. 1832.

A brief résumé of what was known at that time, with some original statements concerning the insects observed by him in amber.

TRANSLATION: Insects of a former world. (Burm.-Shuck., Man. ent., pp. 574-581.) 8°. London. 1836.

——— See also **Hünefeld, L.**

Buttner, David Sigismond. Rudera diluvii testes, i. e. zeichen und zeugen der sündfluth; in ansehung des itzigen zustandes unserer erd- und wasser-kugel; insonderheit der darinnen vielfältig auch zeither in querfurtischen revier unterschiedlich angetroffenen; ehemahls verschwemten thiere und gewächse; bey dem lichte natürlicher weissheit betrachtet; und nebst vielen abbildungen zum druck gegeben. 4°. Leipzig. 1710. front., t. p., pl., pp. (6), 314, (20), pl. 30.

Figures a few insects on plates 16 and 23, briefly referred to on page 226.

Capellini, Giovanni. Pesci ed insetti fossili nella formazione gessosa del Bolognese. (Gazz. dell' Emilia, no. 141.) 1869.

Not seen; quoted from Malfatti.

——— Il calcare di leitha, il sarmatiano e gli strati a congerie nei Monti di Livorno, di Castellina marittima, di Miemo, e di Monti Catini. Considerazioni geologiche e paleontologiche. (Atti accad. lincei, (3), mem. classe sc. fis., 2: 275-291.) 4°. Roma. 1878.

Gives on p. 285 a list of six insects found in the diatomaceous schists of Gabbro, two identical with Oeningen species.

——— Gli strati a congerie o la formazione gessosa-solfifera nella provincia di Pisa e nei dintorni di Livorno. (Atti accad. lincei, (3), mem. sc. fis., 5: 375-427, pl. 1-9.) 4°. Roma. 1880.

Refers in several places to the occurrence of insects, and especially of larvæ of Libellula in different strata and localities.

Chantre, Ernest. See **Lartet, L.,** et **Chantre, E.**

Charpentier, T. von. **Beschreibung** eines libellulinits aus Kroatien. (Neues jahrb. f. miner., 1841, 332-337, pl. 1.) 8°. Stuttgart. 1841.

Description, figure, and discussion of the affinities of a beautifully preserved dragon-fly's wing from Radoboj.

——— Ueber einige fossile insecten aus Radoboj in Croatien. (Nova acta acad. leop.-carol., 20, i: 399-410, tab. 21-23.) 4°. Vratislaviæ, etc. 1843.

Descriptions and (poor) illustrations of seven tertiary insects.

Cope, E. D. Report on the vertebrate paleontology of Colorado. (Ann. rep. U. S. geol. surv. terr., 1873, 427-533, pl. 1-8.) 8°. Washington. 1874.

On pp. 439-440 he refers to the horizon of the insect-bearing "Green-river shales," and records "insects and their larvæ"—some of the latter "nearly an inch long, and others minute and in prodigious numbers"—from Fontanelle Creek, and the "east side of Green River above the mouth of Labarge Creek."

Cope, E. D. A contribution to the knowledge of the ichthyological fauna of the Green River shales. (Bull. U. S. geol. surv. terr., 3: 807-819.) 8°. Washington. 1877.

He announces on p. 807 the discovery of fossil insects "near the mouth of Labarge Creek," Wyoming Territory, and at another locality "nearer the main line of the Wasatch Mountains."

Coquand, Henri. Sur la découverte faite dans les plâtrières d'Aix d'une grenouille fossile. (Bull. soc. géol. France, (2), 2: 383-386.) 8°. Paris. 1845.

Announces also the occurrence of insects in the same locality, and reviews what is known of them from the papers of Boisduval and Curtis.

A notice, not seen, will be found in Froriep's Neue notizen, 37: 33-36. 4°. Erfurt. 1846.

Cordus, Valerius. Sylua, qua rerum fossilium in Germania plurimorum metallorum, lapidum et stirpium variarum notitiam lapidum brevissime persequitur. f°. Tiguri. 1561.

Not seen; said to contain references to fossil insects from Oeningen.

Costa, Achille. See **Hope**, F. W.

Croizet (*l'abbé*). Indications des fossiles de diverses natures qu'on trouve dans la montagne de Gergovie, avec les couches qui leur servent de gisement. (Bull. soc. géol. France, 7: 104–106.) 8°. Paris. 1836.

Merely mentions the occurrence of insects at Merdogne, p. 106. Noticed in Neues jahrb. mineral., 1836, 626–627. 8°. Stuttgart. 1826.

Curtis, John. Observations upon a collection of fossil insects discovered near Aix in Provence, in the summer of 1828, by R. J. Murchison and Charles Lyell, jr. (Murch.-Lyell, Tert. fresh water form. Aix, pp. 9–13, pl. 6.) 8°. Edinburgh. 1829. (Edinb. new. phil. journ., 7: 293–297, pl. 6.) 8°. Edinburgh. 1829.

A list, with occasional brief descriptions, of forty-seven species; the first important notice of the Aix insects.

——— See also **Murchison**, R. I.; **Murchison**, R. I., and **Lyell**, C.

Dawson, George Mercer. Sketch of the geology of British Columbia. 8°. London. 1881. pp. 19. (Geol. mag., (2), 8: 156–162, 214–227.) 8°. London. 1881.

Refers, p. 6 (162), to the general conclusions furnished by the tertiary insects of the interior plateau.

——— See also **Selwyn**, A. R. C., and **Dawson**, G. M.

Deichmüller, J. V. Fossile insecten aus den diatomeenschiefer von Kutschlin bei Bilin, Böhmen. 4°. Halle. 1881. pp. 39, pl. (Nova acta leop.-carol.-deutsch. akad. naturf., 42: 293–331, tab. 21.) 4°. Halle. 1881.

Describes and figures thirteen species, all but one of them new, and mostly Coleoptera. They indicate a warmer climate at the time.

Desmarest, Anselme Gaetano. Insectes dans le succin.

Not seen. Cf. Marcel de Serres in Ann. sc. nat., 15: 102. 8°. Paris. 1828. Also Guérin in Dict. class. hist. nat., 8: 580. 8°. Paris. 1825.

Ehrenberg, Christian Gottfried. Eine sammlung bei Brandenburg aufgefundener bernsteinstücke. (Froriep, Neue notizen geb. nat.- heilk., 19: 120.) 4°. Weimar. 1841.

Ehrenberg, C. G.—Continued.

Refers to insects of the genera Ceratopogon and Gryllus and to Phryganidæ and ants. Notice of same in Neues jahrb. mineral., 1843, 502. 8°. Stuttgart. 1843.

Erichson, W. F. See **Maravigna**, C.

Eser, Anton Friedrich. Das petrefactenlager bei Ober- und Unter-Kirchberg an der Iller im oberamt Laupheim. (Jahresh. ver. vaterl. naturk. Württ., 4: 258–267.) 8. Stuttgart. 1849.

Records, pp. 264–265, the discovery of two insects "welche einige ähnlichkeit mit der wasserspinne (Argyroneta aquatica) und mit Cimex haben," in the miocene fish beds of Unterkirchberg.

Fischer (*of Mülhausen*). See **Foerster**, B.

Foerster, B. Mittheilungen über das oberelsässische tertiär. 8. Strassburg. 1885. pp. 9. (Tagebl. vers. deutsch. naturf., 58: 386–394.) 4°. Strassburg, 1885.

Mentions half a dozen insects, mostly Coleoptera, found in the "marnes à cyrènes," nearly related to those of Oeningen.

——— Die gliederung des sundgauer tertiärs. (Mitth. comm. geol. Elsass-Lothr., 1: 137–177, cuts, folding table.) 8°. Strassburg. 1888.

The insects on p. 165 were determined with the aid of Herr Fischer of Mülhausen.

——— Vorläufige mittheilung über die insekten des "plattigen steinmergels" von Brunstatt. (Mitth. comm. geol. Elsass-Lothr., 2: 101–103.) 8°. Strassburg. 1889.

A bare list of genera recognized among the eighty-five species found; of these species, forty are Hemiptera, twenty-nine Coleoptera, and ten Diptera.

Fothergill, John. An extract of John Fothergill . . . his essay upon the origin of amber. (Phil. trans., 43: 21–25.) 4°. London. 1746.

Mentions the occurrence in amber, of "ants, spiders, &c."

Fruglaye, de la. Extrait d'une lettre de M. de la Fruglaye à M. Gillet-Laumont, sur une forêt sous-marine qu'il a découverte près Morlaix (Finistère) en 1811. (Journ. des mines, 30: 389–391.) 8°. Paris. 1811.

Notices a fossil chrysalis and a fly.

Gaudin, Charles Théophile. See **Heer**, O.

Geikie, James. Prehistoric Europe; a geological sketch. 8°. London and Philadelphia. 1881. pp. 18, 592, pl. 5.

Refers to notices of pleistocene insects on pp. 54, 256, 299, 440, 480, 494.

Geinitz, F. E. Siebenter beitrag zur geologie Mecklensburgs. 8°. Güstrow. 1885. 80 pp., 2 pl. (Arch. ver. freunde naturg. Meckl., 39: 41–120.) 8°. Güstrow, 1885.

Contains slight notices of peat insects.

Germar, E. F. Insecten in bernstein eingeschlossen, beschrieben aus dem academischen mineralien-cabinet zu Halle. (Germar, Mag. d. entom., 1: 11–18.) 8°. Halle, 1813.

Describes seven insects of various suborders. See also Schlechtendal, D. von.

——— Fauna insectorum Europæ. Fasciculus undevicesimus. Insectorum protogææ specimen, sistens insecta carbonum fossilium. Long, minute fol. Halæ. 1837. 2 t. p., 1 f., index, pl. 1–25.

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Geikie, James. Prehistoric Europe; a geological sketch. 8°. London and Philadelphia. 1881. pp. 18, 592, pl. 5.

Refers to notices of pleistocene insects on pp. 54, 256, 299, 440, 480, 494.

Geinitz, F. E. Siebenter beitrag zur geologie Mecklensburgs. 8°. Güstrow. 1885. 80 pp., 2 pl. (Arch. ver. freunde naturg. Meckl., 39: 41–120.) 8°. Güstrow, 1885.

Contains slight notices of peat insects.

Germar, E. F. Insecten in bernstein eingeschlossen, beschrieben aus dem academischen mineralien-cabinet zu Halle. (Germar, Mag. d. entom., 1: 11–18.) 8°. Halle, 1813.

Describes seven insects of various suborders. See also **Schlechtendal**, D. von.

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Hartmann, P. J.—Continued.
formicas, locustas;" and in book 2, chapt. 5, sect. 8, pp. 278–281, he endeavors to account for the occurrence of inclusions in general.

Another edition of the same date and place differs only in the plates, of which there are twenty according to Boehmer.

Noticed in Ephem. nat. cur., 3, 1: 156.

——— Succincta succini prussici historia et demonstratio. 4°. Berolini. 1699. pp. (8), 48. (Phil. trans., 21: 5–40.) 4°. London. 1699.

Sect. 3, c. iii: Animalculorum succino inclusorum accuratior demonstratio, pp. 19–21 (19–22 sep.), mentions in general terms the different sorts of insects known to be found in amber.

According to Boehmer (4: 469) the separate edition was accompanied by six plates, but they do not exist in the two copies I have seen; the eight preliminary pages do not appear in the Philosophical transactions.

A very full abstract in English, under the title: An account of amber, appears in Phil. trans. abr., 2: 473–493. 4°. London. 1749. The notice of the insects occurs on pp. 481–482. An abstract will also be found in Acta erud., 1700: 332–336. 4°. Lipsiæ. 1700.

Hassencamp, Ernst. Ueber fossile insekten der Rhön. (Würzb. naturwiss. zeitschr., 1: 78–81.) 8°. Würzburg. 1860.

Contains MS. names of fossil insects by Heer, Hagen, and Heyden.

Hebenstreit, Johann Ernest. Mvsevm richterianvm continens fossilia animalia vegetabilia mar. illvstrata iconibvs & commentariis. Accedit de gemmis scalptis antiqvis liber singvlaris. f°. Lipsiae. 1743. pp. 56, 384, (16), 34, portr., pl. 17.

A few fossil insects are specified on p. 256, and a "libella" figured pl. 13, fig. 2.

Heer, O. Ueber die fossile insektenfauna der tertiär-gebilde von Oeningen und Radoboj und die pflanzen aus gleicher formation an der hohen Rhone, aus einem briefe an Professor Bronn. (Neues jahrb. f. mineral., 1847, 161–167.) 8°. Stuttgart. 1847.

A catalogue of the beetles described in the first part of his classical work, with brief remarks on the general aspect of the fauna.

TRANSLATION: On the fossil insects of the tertiary formation of Oeningen and Radoboj. (Quart. journ. geol. soc. Lond., 3, ii: 60.) 8°. London. 1847.

Catalogue and concluding remarks omitted.

——— Physiognomie des fossilen Oeningen. 8°. [Winterthur. 1847.] pp. 22. (Verhandl. schweiz. naturf. gesellsch., 31: 159–180.) 8°. Winterthur. 1847.

A general report on the insects will be found on pp. 167–174. Separate copy not seen.

——— Die insektenfauna der tertiärgebilde von Oeningen und von Radoboj in Croatien. Erster theil: Käfer. 4°. Leipzig. 1847. t. p., pp. 2, 229, 1, pl. 8. (Neue denkschr. allg. schweiz. gesellsch. f. wissensch., 8.) 4°. Neuchâtel. 1847.

The same. Zweiter theil: Heuschrecken, florfliegen, aderflügler, schmetterlinge und fliegen. Mit 17 lithographirten tafeln. 4°. Leipzig. 1849. pp. 264, 5, pl. 17. (Ibid., 11.) 4°. Zürich. 1850.

The same. Dritter theil: Rhynchoten. Mit 15 lithographirten tafeln. 4°. Leipzig. 1853. pp. 4, 138, pl. 15. (Ibid., 13.) 4°. Zürich. 1853.

This classical work is the most important ever published upon fossil insects, and may be called the first serious attempt at the classification of the tertiary species. Most of the material came from Oeningen and Radoboj, but it included all the author could examine from Aix and other localities. 462 species are described and figured, divided as follows: 119 Coleoptera, 39 Gymnognatha, 3 Neuroptera, 80 Hymenoptera, 9 Lepidoptera, 80 Diptera, and 133 Hemiptera. There are very few general observations, but attention should be called to an important excursus on the arrangement of the veins in the wings of insects and the elytra of Coleoptera, in the first part, pp. 76–95.

Reviewed by T. R. J[ones]. (Quart. journ. geol. soc. Lond., 9, ii, 33.) 8°. London. 1853.

Diagnoses of the species described in the third part appeared, without title, in the Bericht österr. litt. zool. bot. paleont., 1850–53, 199–203. 8°. Wien. 1855.

——— Fauna von Radoboj. Aus einem briefe [an Herrn bergrath Haidinger.] (Haidinger, Berichte, 5: 86–87.) 8°. Wien. 1849.

Notice of the more remarkable insects belonging to the Vienna museum, and which are described in his great work, followed by brief remarks on the Radoboj insect fauna as a whole; and by comments of Haidinger.

——— Brief von O. Heer. (Haidinger, Berichte, 5: 107.) 8°. Wien. 1849.

Notice of some peculiarities in the insect fauna of Radoboj in a letter to Unger.

——— Nachricht über die ersten ergebnisse einer durchsicht der reichen suite fossiler insecten, die von Herrn custos Freyer in Radoboj gesammelt . . .

Heer, O.—Continued.

worden waren. (Haidinger, Berichte, 6: 5–7.) 8°. Wien. 1849.

Cursory report of his first examination of a considerable collection of Radoboj insects, three-fifths of which were found to be ants.

——— Die Morlot'sche sammlung von fossilen insecten aus Radoboj. (Haidinger, Berichte, 6: 132–134.) 8°. Wien. 1849.

A similar report to the last in the same volume; the ants bear the same proportion as before and make the tertiary European species equal in number to the living.

——— Flora tertiaria Helvetiæ. Die tertiäre flora der Schweiz. 3 v. 4°. Winterthur. 1854–59. Bd. 1, 1854–55, t. p., pp. 6, 117, pl. 50; —bd. 2, 1856, pp. 4, 110, pl. 51–100; —bd. 3, 1859, pp. 6, 1–200, t. p., pp. 201–378, pl. 101–156, map.

Bd. 1 refers to Oeningen insects on pp. 10–11. The latter half of bd. 3 was republished in 1860 under the title: Untersuchungen über das klima u. s. w. (q. v.). See also the next entry, and Die klimatischen verhältnisse, u. s. w., 1860.

——— Introduction à la flore tertiaire de la Suisse, traduite par Charles Th. Gaudin. (Arch. sc. phys. nat., 26: 293–314.) 8°. Genève. 1854.

A translation of the preliminary matter in the first volume of the preceding; running references to the insects of the period occur here and there, especially on pp. 310, 311.

——— Ueber die fossilen insekten von Aix in der Provence. (Vierteljahrsschr. naturf. gesellsch. Zürich, 1: 1–40, taf. 1–2.) 8°. Zürich. 1856.

The first important paper on Aix insects, cataloguing and describing sixty species of all orders, preceded by remarks on the general characteristics of the fauna, which is considered to have marked Mediterranean features.

——— Lettre à Sir Ch. Lyell [sur l'étude de la flore tertiaire]. (Bull. séances soc. vaud. sc. nat., 5: 145–151, pl.) 8°. Lausanne. 1858.

American types among Oeningen insects, p. 148, and relation of the Oeningen insects and plants, p. 150.

——— Ueber die insectenfauna von Radoboj. (Amtl. ber. vers. deutsch. naturf., 32: 118–126.) 4°. Wien. 1858.

A review of the subject based on the insects described in his general work. The author finds a commingling of European and Indian forms; perfect dragon-flies but no larvæ, showing the deposit to be marine; the occurrence of plants in the same beds, with which the insects have special relations; a closer connection of Radoboj with Aix than with Oeningen.

Heer, O.—Continued.

——— Die klimatischen verhältnisse des tertiärlands aus O. Heer's tertiärflora der Schweiz, bd. 3, s. 327–350, im auszuge mitgetheilt. (Zeitschr. gesammt. naturw., 15: 1–42.) 8°. Berlin. 1860.

Insects are treated of on pp. 11, 12.

——— Untersuchungen über das klima und die vegetationsverhältnisse des tertiärlandes. Mit profilen und einem kärtchen Europa's. Separatabdruck aus dem dritten band der Tertiären flora der Schweitz. 4°. Winterthur. 1860. t. p., pp. 170, pl. (156), karte.

Contains a couple of paragraphs, pp. 134–135 (334–335 of original) upon the tertiary insects and the testimony they bear to the tropical and American nature of the time in which they lived. Another paragraph on pp. 60–61 (260–261) shows how the condition of preservation of insects indicates the season of their entombment.

TRANSLATION. Recherches sur le climat et la végétation du pays tertiaire. Traduction de Charles Th. Gaudin. Avec des profils et une carte de l'Europe. 4°. Winterthur, Genève et Paris. 1861. pp. 220, 22, pl. 1, carte.

The paragraphs on pp. 134–135 of the original are very much expanded on pp. 196–205 of this translation, and include full tables of the families of insects and their numerical representation in the different European deposits of tertiary time. Besides this, the Marquis Gaston de Saporta in his included Examen des flores tertiaires de Provence, pp. 183–171, gives a paragraph, pp. 152–153, concerning the insects of Aix. The remaining paragraph referred to above appears unchanged on p. 61.

——— On the fossil flora of Bovey Tracey. (Phil. trans., 152: 1039–1086, pl. 55–71.) 4°. London. 1862.

Insects from Bovey, p. 1082, pl. 68.

——— Flora fossilis arctica. Die fossile flora der polarländer enthaltend die in Nordgrönland auf der Melville-insel, im Banksland, am Mackenzie, in Island und in Spitzbergen entdeckten fossilen pflanzen. Mit einem anhang über versteinerte hölzer der arctischen zone von Dr. C. Cramer. 4°. Zürich. 1868. pp. 7, 192, map, pl. 50.

Contains: Fossile insecten von Nordgrönland, pp. 129–130, pl. 19, 50; four species described. Miocene flora von Island: Gliederthiere, pp. 154–155, pl. 27; one beetle described.

Forms vol. 1 of Heer's Flora fossilis artica.

——— Die miocene flora von Spitzbergen. Vorgetragen . . . bei der versammlung der schweizerischen natur-

Heer, O.—Continued.
forschenden gesellschaft, den 23 August, 1869, in Solothurn. 8°. Solothurn [n. d.]. pp. 15. (Verhandl. schweiz. naturf. gesellsch., 53: 156–168.) 8°. Solothurn. 1870. (Zeitschr. gesammt. naturw., (2), 1: 318–324.) 8°. Berlin. 1870.

Notices insects briefly at p. 12 (Verhandl. 165, Zeitschr. 323).

TRANSLATION: La flore miocène du Spitzberg. (Ann. sc. nat., (5), bot., 12: 302–311.) 8°. Paris. 1869.

Insects on pp. 308–309.

——— Preliminary report on the fossil plants collected by Mr. Whymper in North Greenland in 1867. (Rep. Brit. assoc. adv. sc., 39: 8–10.) 8°. London. 1870.

Two insects mentioned on p. 10, the same as in the next.

——— Contributions to the fossil flora of North Greenland, being a description of the plants collected by Mr. Edward Whymper during the summer of 1867. (Phil. trans., 159: 445–488, pl. 39–56.) 4°. London. 1870.

Contains description, pp. 484–485, and figures, pl. 44, fig. 9, and pl. 56, fig. 14, of two insects, Cistelites and Cercopidium, under the heading: Animals from Atanekerdluk. A. Insecta.

The paper forms vol. 2, no. i, of Heer's Flora fossilis arctica.

——— Die miocene flora und fauna Spitzbergens. Mit einem anhang über die diluvialen ablagerungen Spitzbergens. 4°. Stockholm. 1870. pp. 98, taf. 16. (Kongl. svenska vetensk.-akad. handl., 8, vii.) 4°. Stockholm. 1870.

Zweiter abschnitt: Beschreibung der miocenen thiere Spitzbergens. I. Insekten, pp. 73–78, pl. 16; contains descriptions of twenty-three insects, of which twenty are Coleoptera.

Forms vol. 2, no. iii, of Heer's Flora fossilis arctica.

——— Ueber die braunkohlen-flora des Zsilythales in Siebenbürgen. 8°. Pest. 1872. pp. 24, pl. 6. (Mitth. jahrb. ung. geol. anst., 2, i.) 8°. Pest. 1872.

Mentions the discovery of fossil insects in the tertiary beds of Tállya.

——— See also **Hassencamp**, E.

Helwing, Georg Andreas. Lithographia angerburgica, sive lapidum et fossilium, in districtu angerburgensi & ejus vicinia, ad trium vel quatuor milliarium spatium, in montibus, agris, arenofodinis & in primis circa lacuum littora & fluviorum ripas, collectorum brevis & succincta consideratio additis rariorum aliquot figurit aeri incisis, cum praefatione autoris & indicibus necessariis. 4°. Regimonti. 1717. pp. (14), 96, (13), front., pl. 11.

The same. Pars II. In qva de lapidibvs figvratis ad triplex regnvm minerale, vegetabile et animale redactis aliisqve fossilibvs in districtv angerbvrgensi ejvsqve vicinia noviter detectis, et in specie de origine lapidvm literas experimentivm, occasione lapidis cvjvsdam resaviensis, literas latinas L. V. R. repraesentantis, svccincte disseritvr; additis iconibvs rariorum. 4°. Lipsiae. 1720. pp. 132, pl. 6.

On p. 78 is given a short notice of insects (formicae, blattae, tipulae, millipedes aliaqve insecta) in amber.

Henkel, Johannes Fridericus. De succino fossili in Saxonia electorali. (Acta phys. med. acad. leop-carol., 4: 313–316.) 4°. Norimbergae. 1737.

Contains reference to insect inclusions on p. 316. Also said to be given in his Kleine miner. chym. stud., p. 539. 8°. Dresden und Leipzig. 1744; the latter not seen.

Hensche, August. Ueber den bestand und die neueren erwerbungen der bernsteinsammlung. (Schrift. phys.-ökon. gesellsch. Königsb., 5, sitzungsb., 14–15.) 4°. Königsberg. 1864.

History of the growth and present extent of the collection, rich in insect inclosures.

——— Bericht über die bernsteinsammlung der königl. physikalisch-ökonomischen gesellschaft. (Schrift. phys.-ökon. gesellsch. Königsb., 6: 210–215.) 4°. Königsberg. 1865.

Contains 8853 specimens with insect inclosures, of which over 6000 are Diptera; tables of the different groups are given on pp. 211–213.

Henslow, John Stevens. Supplementary observations to Dr. Berger's account of the Isle of Man. (Trans. geol. soc. Lond., 5: 482–505.) 4°. London. 1821.

Under the head of diluvial deposits, he refers, p. 501, to a bed of peat in the parish of Kirk Balaff, "containing a vast number of the exuviæ of beetles, bees and their nests, crushed together with seed vessels, rotten, but having their external coating well preserved. . . . In general the hard wings are the only parts of the beetles which are preserved, and these are in appearance as fresh as on a living insect. Dr. Leach was enabled to identify a few with species at present existing in England."

Heyden, C. von. Reste von insekten aus der braunkohle von Salzhausen und Westerburg. (Palæontogr., 4: 198–201, pl. 37–38.) 4°. Cassel. 1856.

Divided into: Dicerca taschei Heyden aus der braunkohle von Salzhausen, pp. 198–199, pl. 37, figs. 1–4.—Gänge von insekten-larven in hölzern der braunkohle von Salzhausen, pp. 199–200, pl. 38; borings of an Anobium, a Prionus, and a buprestid.—Fliegen aus der braunkohle der grube Wilhelmsfund bei Westerburg in herzogthum Nassau, pp. 200–201, pl. 37, figs. 6–8; three species described.

——— Fossile insekten aus der braunkohle von Sieblos. (Palæontogr., 5: 115–120, pl. 23.) 4°. Cassel. 1858.

Description of ten species, mostly beetles.

——— Fossile insekten aus der rheinischen braunkohle. (Palæontogr., 8: 1–15, pl. 1, 2, figs. 1–13.) 4°. Cassel. 1859.

Description of twenty-five insects of various orders.

——— Gliederthiere aus der braunkohle des Niederrhein's, der Wetterau und der Rhön. (Palæontogr., 10: 62–82, pl. 10.) 4°. Cassel. 1862.

Description of a crustacean, two arachnids, and thirty-two hexapods of various orders.

——— See also **Hassencamp,** E.; **Meyer,** C. H. von; and **Rathke,** M. H.

Heyden, Carl von und Lucas von. Fossile insekten aus der braunkohle von Salzhausen. (Palæontogr., 14: 31–35, pl. 9, figs. 13–22.) 4°. [Cassel.] 1865.

Description of twelve insects, mostly Coleoptera, and remarks on three others.

——— See also **Krantz,** A.

Hope, Frederic William. Observations on succinic insects. (Trans. ent. soc. Lond., 1: 133–147; 2: 46–57, pl. 7.) 8°. London. 1836–37.

General remarks on the insects found in amber and gum animé, followed by a list of insects hitherto noticed by the author or known to Berendt. The species are all claimed as distinct from the recent, and to be tropical in their affinities.

——— Observations on the fossil insects of Aix in Provence, with descriptions and figures of three species. (Trans. ent. soc. Lond., 4: 250–255, pl. 19, figs. 1–3.) 8°. London. 1847.

Contains a list of genera occurring at Aix and "descriptions of three fossil species of insects" (Balaninus, Rhynchaenus, Corizus) from the same locality.

Hope, F. W. Descrizione di alcune specie d' insetti fossili pel Rev. G. F. Hope; memoria presentata all' Accademia degli aspiranti naturalisti, in Dicembre 1847, ed inserita negli annali della stessa [with notes by A. Costa]. 8°. (Napoli.) n. d. pp. 7, pl. (Ann. acc. aspir. nat. Napoli, 1847. pp. —, tav. 10.) 8°. Napoli.

Five species described and figured.

Hueber, Georgius Ludovicus. See **Beringer,** J. D. A.

Hünefeld, L. Ueber bernstein-insecten. (Oken's Isis, 1831, 2000 [1100].) 4°. Leipzig. 1831.

A list of insects is given by Burmeister.

Ittiologia veronese del museo Bozziano ora annesso a quello del conte Giovambattista Gazola e di altri gabinetti di fossili veronesi con la verzione latina. f°. Verona. 1796. pp. 52, 323, pl. 76.

Part I, § 27, p. 31, records in the Boza museum, "duo Asili, Cimex unus Americanus, omnes inde effosi."

John, Johann Friedrich. Naturgeschichte des succins, oder des sogenannten bernsteins; nebst theorie der bildung aller fossilen, bituminösen, inflammabilien des organischen reichs und den analysen derselben. 2 th. 16°. Köln. 1816. 1er th., pp. 18, 438;—2er th., pp. 6, 125, (21).

A list of insects found in amber, arranged by genera, will be found in 1, pp. 221–223; and in 1, pp. 169–176, a bibliography of amber literature.

Jokély, Johann. Die tertiären süsswassergebilde des Egerlandes und der Falkenauer gegend in Böhmen (Jahrb. k. k. geol. reichsanst., 8: 466–515.) 8°. Wien. 1857.

Remains of insects are recorded from Eger (p. 477), Krottensee (p. 482), Grasseth (p. 502).

Jones, Thomas Rupert. Fossil insects. (Geol. mag., 7: 348.) 8°. London. 1870.

Correction of geological horizon of certain insects described by Westwood.

——— See also **Heer,** O.

Karg, Joseph Maximilian. Ueber den steinbruch zu Oeningen bei Stein am Rheine und dessen petrefacte. (Denkschr. vaterl. gesellsch. aertze u. naturf. Schwabens, 1: 1–73.) 8°. Tübingen. 1805.

Not seen. It contains references to the insects, and is mentioned by Heer.

Kawall, H. Der bernsteinsee in Kurland. (Correspondenzbl. naturf. ver. Riga, 6: 69–71. 8°. Riga. 1853.

Not seen; said to contain something on amber insects.

Knorr, Georg Wolfgang. Lapides, ex celeberrimorum virorum sententia diluvii universalis testes, quos in ordines ac species distribuit, suis coloribus exprimit aeris incisos in lucem mittit et alia naturæ miranda addit. *Also entitled:* Sammlung von merkwürdigkeiten der natur und den alterthümern des erdbodens, zum beweis einer allgemeinen sündfluth nach der meÿnung der berühmtesten maenner aus dem reiche der steine gewiesen und nach ihren wesentlichen arthen, eigenschafften, und ansehen, mit farben ausgedruckt, und in kupffer herausgegeben, in Nürnberg 1750. *With second title:* Sammlung von merckwürdigkeiten der natur und alterthümern des erdbodens welche petrificirte körper enthält ausgewiesen und beschrieben (erster theil). f°. Nüremberg. 1755. 2 t. p., pp. (2), 32, t. p. to atlas, tab. 1–38 (= 57 pl.).

Pl. 33 contains six figures, five of insects from Oeningen, the only distinguishable ones being three of odonate larvæ, explained on p. 27. To this work is appended, pp. 29–32, a letter from Mylius to von Haller, entitled Beschreibung einer neuen gröndländischen thierpflanse. Bound up with the same is the following:

——— Die naturgeschichte der versteinerungen zur erläuterung der knorrischen sammlung von merkwürdigkeiten der natur, herausgegeben von Johann Ernst Immanuel Walch. Erster theil. f°. Nürnberg. 1773. pp. (6), 187.

This contains a further explanation of the plate on p. 181, in which the insects are called libellen, and which is preceded by an account (pp. 171–180) of what was then known of fossil insects, entitled Die entomolithen und helmintholithen.

Koch, (Friedrich) Carl Ludwig, und **Berendt** (Georg Carl). Die im bernstein befindlichen crustaceen, myriapoden, arachniden und apteren der vorwelt. f°. Berlin. 1854. t. p., pp. 4, 124, pl. 17. (Berendt, Bernst. befindl. org. reste vorw., 1, i.)

Edited with additions of importance by Menge. 10 Myriapoda, 123 Arachnida, and 21 Thysanura are described and figured, besides numerous others briefly described in the notes which Menge adds to nearly every species, nearly or

Koch und Berendt, etc.—Continued.

quite doubling the extent of the text. Menge adds on pp. 7–8 a list of the species in his collection. Plates 1, 2, and 15 were different in earlier impressions. Plates 16 and 17 are supplementary.

Kollar, Vincent. See **Reuss**, A. E.

[**Krantz**, August.] Verzeichniss der von Dr. Krantz gesammelten, von Herrn Senator v. Heyden und Herrn Hauptmann v. Heyden in Frankfurt a. M. und von Herrn Dr. Hagen in Königsberg in der Paleontographica bis jetzt beschriebenen und abgebildeten insecten, etc., aus dem braunkohlengebirge von Rott im Siebengebirge. (Verhandl. naturh. ver. preuss. Rheinl. u. Westph., 24: 313–316.) 8°. Bonn. 1867.

Enumerates 73 Coleopt., 25 Dipt., 11 Neuropt., 4 Hymenopt., 3 Arachn., 2 Hemipt., 1 Lepidopt., 1 Orthopt. = 120 species.

Lartet, Louis, et **Chantre**, Ernest. Études paléontologiques dans le bassin du Rhône; période quaternaire. (Arch. mus. hist. nat. Lyon, 1: 59–130.) 4°. Lyon. 1876.

Mentions the occurrence of insects at La Boisse, p. 104, and Sonnaz, p. 105.

Leach, William Elford. See **Henslow**, J. S.

Lindner. See **Schöberlin**, E.

Lyell, C. See **Murchison**, R. I., and **Lyell**, C.

MacCulloch, John. On animals preserved in amber, with remarks on the nature and origin of that substance. (Quart. journ. sc. lit. arts, 16: 41–48.) 8°. London. 1823. (Froriep, Notizen, 6, no. 114, pp. 49–51.) 4°. Erfurt. 1823.

Mainly devoted to describing the methods of distinguishing amber from other gums; insects and other animals are only mentioned in a general way.

Malfatti, Giovanni. Osservazioni sopra alcuni insetti fossili dell' ambra e del copale. 8°. Milano. 1878. pp. 15. (Atti soc. ital. sc. nat., 21: 181–195.) 8°. Milano. 1878.

Of a general nature, but contains at the close a list of additions to the Museo civico with remarks; and three pages of bibliography are appended.

——— Bibliographia degli insetti fossili italiani finora conosciuti. 8°. Milano. 1881. t. p., pp. 12. (Atti soc. ital. sc. nat., 24: 89–100.) 8°. Milano. 1881.

Malfatti, G.—Continued.

A valuable résumé of what has been published concerning the fossil insects of Italy, arranged by deposits. None are older than the tertiaries. Mention is made of three or four specimens in Italian museums, not before published.

Maravigna, Carmelo. Insectes dans l'ambre (Rev. zool., 1: 168–169), [followed by remarks of Guérin Méneville] (pp. 169–170, pl. 1). 8°. Paris. 1838.

Maravigna's note is upon the conditions of occurrence of Sicilian amber. Guérin figures, enumerates and occasionally names about fifteen species, mostly Coleoptera, Hymenoptera, and Diptera.

Reviewed by Erichson with original notes in Ber. wiss. leist. entom., 1838, 29. 8°. Berlin. 1840. (Arch. f. naturg., 5, ii: 309.) 8°. Berlin. 1839. [1840.]

——— See also **Rondani**, C.

Massalongo, Abramo Bartolommeo Pr. Sopra un nuovo genere di pandanee fossili della provincia veronese. 8°. Verona. 1853. pp. 16, (7, [201–207]), tav. 4. (Mem. accad. agric. Ver., 29: 187–207, pl. 1–4.) 8°. Verona. 1854.

Refers on p. 12 (196) to the occurrence of Neuroptera, similar in form and size to the living Libellula, with "alcune piccole api" at Monte Bolca. The only copy I have seen is that of the separate paper, in which pp. 17–end are replaced by those of the academy's memoir.

——— Monografia delle nereide fossili. 8°. Verona. 1855. pp. 35, pl. 6.

In an appendix, pp. 31–32, he enumerates five species of insects from Monte Bolca.

——— Prodromo di un' entomologia fossile del M. Bolca. (Studii paleont., pp. 11–21, tab. 1 (pars.), 2.) 8°. Verona. 1856.

Describes seven insects of different orders.

Omboni says of this paper "che fa parte dei suoi studj paleontologici, pubblicati nel 1856 a Verona, nel Programma dell' I. R. Ginnasio liceale di quella città (tipografia Antonelli)."

——— Compendium faunæ et floræ fossilis bolcensis.

Not seen; nor have I been able to find a single reference to it in bibliographies, and presume it is still unpublished. It is referred to as above in several places by the author in other publications; see Studii paleont., p. 14, etc. It is not mentioned in Sordello's Bibl. paleont. vegt. ital. (1881.) Malfatti says of it (Bibl., 12) "rimasto inedito."

——— e **Scarabelli**, Giuseppe. Studii sulla flora fossile e geologia stratigrafica del Senigalliese. f°. Inola. 1859. pp. 8, 506, map, pl. 45.

Parte 1ª, Geologia stratigrafica is by Scarabelli; parte 2ª, Flora fossile by Massalongo. Insetti on p. 25, contains a nominal list of species.

Massmann. See **Schöberlin**, E.

Matheron, Philippe. Compte rendu de la visite du terrain à gypse à Aix et du volcan de Beaulieu. (Bull. soc. géol. France, 13: 451–465.) 8°. Paris. 1842.

The insects of the beds at Aix are referred to in general terms on p. 454, and their relative position pointed out.

——— Recherches comparatives sur les dépots fluvio-lacustres tertiaires des environs de Montpellier, de l'Aude et de la Provence. 8°. Marseille. 1862. pp. 108 (?). (Mém. soc. émul. Marseille, 1: 173–280.) 8°. Marseille. 1861.

Not seen; gives, according to Oustalet, some notice of Aix insects.

Meigen, Johann Wilhelm. See **Rathke**, M. H.

Meinecke, Johann Christoph. Vermischte anmerkungen über verschiedene gegenstände, sonderlich des steinreichs. (Naturforscher, st. 20: 185–210.) 16°. Halle. 1784.

The first part, pp. 186–189, is devoted to amber as occurring in which he mentions various insects and Gryllus domesticus in particular.

Menge, A. Lebenszeichen vorweltlicher, im bernstein eingeschlossener thiere. (Progr. petrischule Danzig, 1856, pp. 1–32.) 4°. Danzig. [1856.]

Contains a valuable systematic review of the species in the author's collection, with occasional brief descriptions. The collection is one of the largest ever made, containing 67 Myriapoda of 31 species, 674 Arachnida of more than 150 species, and 3,102 Insecta, of which even the genera are rarely enumerated, but only separated by families.

——— Ueber ein rhipidopteron und einige andere im bernstein eingeschlossene thiere. *Also entitled:* Ueber ein rhipidopteron und einige helminthen im bernstein. 8°. Danzig. 1866. t. p., pp. 8, figs. (Schriften naturf. gesellsch. Danzig, (2), 1, iii–iv.) 8°. Danzig. 1866.

The strepsipteron is described and figured under the name of Triæna tertiaria, and figures are given of a Chironomus to which a Mermis is found attached.

——— See also **Koch**, F. C. L., und **Berendt**, G. C.

Mercati, Michael. Michaelis Mercati samminiatensis Metallotheca opus posthumum, auctoritate & munificentia Clementis XI. pontificis maximi e tenebris in lucem eductum; opera autem, & studio Joannis Mariae Langisii archiatri

Mercati, M.—Continued. pontificii illustratum. f°. Romae. 1717. pp. 64, 378, (18), pl. 6, figs.

Arm. 5, cap. 9: De succino, pp. 87–90, contains on p. 89 figures of some half dozen insects in amber which are enumerated in a single line on p. 88.

Meyer, C. E. H. von. Mittheilung an professor Bronn. (Neues jahrb. mineral., 20: 465–468.) 8°. Stuttgart. 1852.

Notices, p. 467, Heyden's Dicerca taschei: his discovery of insect borings in wood from the brown coal; and his statement that Xylophagus antiquus is a Bibio.

Millar, George Henry, *editor*. A new, complete, and universal body or system of natural history; being a grand, accurate, and extensive display of animated nature . . . written by a society of gentlemen. f°. London. n. d.

Not seen; according to Dr. Hagen the work mentions, p. 421, the presence of insects in amber.

Miller, S. A. The cænozoic or tertiary period. (Journ. Cinc. soc. nat. hist., 4: 93–144.) 8°. Cincinnati. 1881.

Gives lists of the tertiary insects described from North America.

Moore, C. Notes on a plant and insect bed on the Rocky River, New South Wales. (Quart. journ. geol. soc. Lond., 26: 261–263, pl. 18, figs. 2–11.) 8°. London. 1870.

Brief notice of the insects, about ten species of beetles, which are figured. An abstract with the same title (excepting the omission of the word Notes) on p. 2 of same, with discussion, which does not touch the insects. An abstract will also be found in Phil. mag., 39: 463. 8°. London. 1870.

Motschoulsky, Victor. Lettre à M. Ménétriés. (Études entom., 5: 3–38, pl.) 16°. Helsingfors. 1856.

Contains, pp. 25–30, a notice of Menge's collection of amber insects with descriptions, pp. 25–27, and figures (in the single plate) of thirteen Coleoptera. Also, p. 34, a brief notice of Heer's collection of Oeningen insects.

Münster, Sebastian. Cosmographiae uniuersalis Lib. VI. in quibus, iuxta certioris fidei scriptorum traditionem describuntur, Omniū habitabilis orbis partiū situs, propriaeq’ dotes. Regionum Topographicæ effigies. Terræ ingenia, quibus sit ut tam differentes & uarias specie res, & animatas & inanimatas, ferat. Animalium perigrinorum naturæ & picturæ. Nobiliorum ciuitatum icones & descriptiones. Regnorum initia, incrementa & translationes. Omnium gentium mores, leges, religio, res gestæ, mutationes: Item regum & principum genealogiæ. Autore Sebast. Munstero. f°. Basileæ. 1554. ff. (12), pl. (14), pp. 1163, + 1 folding plate not paged.

Liber III contains, pp. 783–784, a section De succino quod in Prusia legitur, in which, p. 784, amber is said to contain "bestiolae, ut muscae, culices, apes, formicae, lacertae, etc."

The German edition of 1598 contains this reference on pp. 1145–1146, and that of 1628 (?) on p. 1297.

Dr. Hagen has called my attention to this reference as perhaps the earliest mention of insects in amber. The same reference is doubtless contained in the latin edition of 1550, perhaps in the German edition of 1544. See Harv. univ. bull., 2: 285.

Murchison, R. I. On a fossil fox found at Oeningen near Constance; with an account of the deposit in which it was imbedded. (Trans. geol. soc. Lond., (2), 3: 277–290, pl. 33–34.) 4°. London. 1832.

The insects, pp. 286–287, pl. 34, are described by Curtis, with a mention of others determined by Samouelle; only a dozen species in all are mentioned; those figured are Odonata.

——— and **Lyell**, *Sir* Charles. On the tertiary fresh-water formations of Aix in Provence, including the coal field of Fuveau . . . with a description of fossil insects contained therein by John Curtis. (Proc. geol. soc. London., 1: 150–151.) 8°. London. 1829.

Accompanied, p. 151, by "Observations on the fossil insects" mentioned, by John Curtis, afterwards described and figured by the same. See Curtis, J.

Novák, O. Fauna der cyprisschiefer des egerer tertiärbeckens. Wien. 8°. 1877. pp. 26, pl. 3. (Sitzungsb. akad. wiss. Wien, 76, abth. 1, math. nat. classe, 71–96, taf. 1–3.) 8°. Wien. 1878.

Descriptions and illustrations of nineteen insects of various groups, but mostly Diptera.

Oken, Lorenz. Einige wörter über den Oeningensteinbruch. (Oken's Isis, 1840, 282–283.) 4°. Leipzig. 1840.

Refers to its fossil insects and particularly the larvæ of Odonata.

Omboni, Giovanni. Di alcuni insetti fossili del Veneto. 8°. Venezia. 1886. pp. 16, pl. 2–3. (Atti r. ist. Ven. sc. lett. arti, (6), 4: 1421–1436, pl. 2–3.) 8°. Venezia. 1886.

Figures and describes a few species from Monte Bolca described previously by Heer and Massalongo and adds descriptions and figures of two Diptera and Coleoptera from Chiavon, Bolca, and Novale.

Oustalet, É. Recherches sur les insectes fossiles des terrains tertiaires de la France; première partie. Insectes fossiles de l'Auvergne. (Ann. sc. geol., 2, art. 3. pp. 1-178, pl. 1-6.) 8°. Paris. 1870.

——— *The same, entitled:* Mémoire sur les insectes fossiles des terrains tertiaires de la France. (Bibl. école hautes études, sect. sc. nat., art. 7, pp. 1-178, pl. 1-6.) 8°. Paris. 1871.

Studied descriptions of forty-five species, most of them new; they are mostly Diptera, especially Protomyiae and Bibiones, and Coleoptera, especially Rhynchophora. The characteristics of the groups to which the insects belong are given in detail, and references made to other fossil insects of the same groups. The whole is preceded by a chapter of 48 pages, containing a good history of our knowledge of fossil insects, and is followed by one of 17 pages of general results reached by a study of the Auvergne fossil insects, which are found to show a mingling of indigenous and of exotic forms, a Mediterranean and American aspect, and a warmer climate than now.

An extended notice will be found in the Revue scient. France, (2), 4: 136-137. 4°. Paris. 1874. See also Giard., A., in Section VIIf.

——— Insectes de l'ambre. (Bull. soc. philom. Paris, (6,) 10: 98-99.) 8°. Paris. 1873.

A brief notice of various insects inclosed in a single block of amber in which Vaillant had detected a reptile. The insects are mentioned still more briefly in Vaillant's paper.

——— Les insectes fossiles de la France. (La nature, 3: 33-36, figs.) 4°. Paris. 1874.

A popular account of the tertiary insects of France, with figures of Bibio edwardsi, Calosoma agassizi and Cyllo sepulta.

——— Observation sur la communication de M. Filhol [sur les vertébrés fossiles des dépôts de phosphate de chaux du Quercy]. (Bull. soc. philom. Paris, (6,) 11: 21.) 8°. Paris. 1874 [1877].

Analogies between the insect fauna of the oligocene of southern France on the one hand, and that of southern N. America at the present time, or of the oligocene of the Rocky Mountains on the other.

Peale, Albert Charles. Report on the geology of the Green River district. (Ann. rep. U. S. geol. surv. terr., 1877, 511-646, pl. 47-76.) 8°. Washington. 1879.

Contains, p. 535, notice of the discovery of insects on Twin Creek, Wyoming Terr.; and pp. 633-639 a reprint of Scudder's description of Indusia calculosa from Horse Creek Valley, Wyoming; see also p. 528.

Pictet de la Rive, F. J. Considérations générales sur les débris organiques qui ont été trouvés dans l'ambre et en particulier sur les insectes. (Arch. sc. phys. nat., 2: 5-16.) 8°. Genève et Paris. 1846.

Amber insects altogether differ specifically from living forms; a considerable number of genera are also distinct and there are two peculiar families: Archaeides in the Arachnida and Pseudoperlides in the Neuroptera; a warmer climate than the present is indicated.

TRANSLATION: General considerations on the organic remains, and in particular on the insects, which have been found in amber. (Edinb. new phil. journ., 41: 391-401.) 8°. Edinburgh. 1846.

Presl, Joannes Swatoplucus. Additamenta ad Faunam protogaeam, sistens descriptiones aliquot animalium in succino inclusorum. (Deliciae pragenses, 1: 191-210.) 16°. Pragae. 1822.

Describes 1 species of Cynips, 6 Formica, 1 Tinea, 3 Tipula, 4 Musca, 2 Aranea, 1 Phalangium, and 1 Acarus. Noticed in Oken's Isis, 1823, 374-375. 4°. Jena. 1823.

Procaccini-Ricci, Vito. Lettera prima . . . sull' anatomia delle filliti sinigalliesi. (Nuov. ann. sc. nat., 1: 190-213, pl. 4-5.) 8°. Bologna. 1838.

Refers, p. 210, to a fossil insect which is figured with a leaf, pl. 5, fig. 1; no details are given and the figure is unrecognizable.

——— Lettera . . . sugli entomoliti delle gessaje sinigagliesi. (Nuov. ann. sc. natur., ann. 4, tom. 7, pp. 448-456.) 8°. Bologna. 1842.

A general paper, in which on p. 449 it is stated that Coleoptera, Hemiptera, Lepidoptera, Neuroptera, Hymenoptera, Diptera, and Aptera have been found at Senigaglia.

Rathke, Martin Heinrich. Untersuchung über die bernstein-insecten. (Oken's Isis, 1829, 413.) 4°. Leipzig. 1829.

Mentions his large collection of amber insects collected in company with Berendt; the Coleoptera had been studied by Heyden and Schmidt, the Ichneumonidæ by Gravenhorst, the Diptera by Meigen and Wiedemann.

Reuss, A. E. Geognostische skizzen aus Böhmen. 1er theil: Die umgebungen von Teplitz und Bilin in beziehung auf ihre geognostischen verhältnisse; ein beitrag zur physiographie des böhmischen mittelgebirges; mit 1 karte und 9 tafeln. 8°. Leitmeritz. 1840.

Reuss, A. E.—Continued.

Not seen; according to Deichmüller this work contains a reference on p. 143 to the occurrence of fossil insects at Bilin.

——— Die geognostischen verhältnisse des Egerer bezirkes und des Ascher gebietes in Böhmen. (Abhandl. k. k. geol. reichsanst., 1: 1–72, map.) 4°. Wien. 1852.

Mentions, p. 58, the occurrence of impressions of Coleoptera and Diptera, generally very indistinct, in the cyprismergel of Krottensee. An exception is noted in a single Dipteron, which is figured and which Kollar places near Penthetria.

Richter, Georg Gottfried. Gazophylacium mineralium oder Mineralienkabinet. 8°. Leipzig. 1719.

Not seen; said to contain something on Oeningen insects.

Rolle, Friedrich. Ueber ein vorkommen fossiler pflanzen zu Obererlenbach (Wetterau). (Neues jahrb. f. mineral., 1877, 769–784.) 8°. Stuttgart. 1877.

Merely mentions, pp. 772–773, the occurrence of remains of insects in the pliocene? beds of Ober Erlenbach.

Rondani, Camillo. Lettre sur les insectes du succin. (Rev. zool., 3: 366–370.) 8°. Paris. 1840.

Followed, p. 370, by remarks by Guérin-Méneville. Rondani makes some corrections of generic determinations in Guérin's supplement to Maravigna's paper. Guérin speaks only of the imperfection of the specimens. See also **Maravigna**, C.

Roy, C. W. van. Ansichten über entstehung und vorkommen des bernsteins, so wie praktische mittheilungen über den werth und die behandlung desselben als handelswaare. 8°. Danzig. 1840.

Not seen.

Samouelle, George. See **Murchison**, R. I.

Saporta, *Marquis* Gaston de. Examen des flores tertiaires de Provence. (Heer, Climat pays tert., pp. 133–171.) 4°. Winterthur. 1861.

At the end of the section on the flora of Aix he refers, pp. 152–153, to the insects of the gypsum beds and their relations to the vegetation of the epoch.

——— Études sur la végétation du sud est de la France à l'époque tertiaire. Suppl. I. Révision de la flore des gypses d'Aix; fasc. I: généralités. 8°. Paris. 1872. pp. 79, pl. 2. (Ann. sc. nat., (5), bot., 15: 277–351, pl. 15–16.) 8°. Paris. 1872.

Saporta, G. de—Continued.

Notices the insects of Aix on pp. 70–71 [342–343]. Gives also a note by A. Giard, p. 69 [341], suggesting the presence at Aix of certain plants, from the occurrence of beetles presumed to feed upon them.

——— See also **Heer**, O.

Scarabelli, Giuseppe. See **Massalongo**, A. B. P., e **Scarabelli**, G.

Schau-platz der natur oder gespräche von der beschaffenheit und den absichten der naturlichen dinge, etc. Dritter theil. 8°. Wienn und Nürnberg. 1748. pp. (22), 592, (11), front., pl. (33).

Refers to the occurrence of flies and beetles in amber, p. 347. A figure of a fossil odonate larva also appears on the plate opposite p. 416 (fig. F).

Scherper. See **Schöberlin**, E.

Scheuchzer, J. J. Beschreibung der natur-geschichten des Schweizerlands dritter theil enthaltende vornemlich eine ober die höchsten alpgebirge an. 1705 getahne reise. 4°. Zürich. 1708. pp. (4), 208, pl. (9).

Refers, p. 68, to the occurrence of flies and spiders in amber (agdstein).

——— Museum diluvianum quod possidet J. J. S. 16°. Tiguri. 1716. pp. (12), 107, (4), front.

Records four fossil insects, p. 106, from Oeningen, Monte Bolca, and Querfurt.

——— Physique sacrée, ou Histoire naturelle de la bible. Traduite du latin; enrichie de figures en taille douce, gravées par les soins de Jean-André Pfeffel. 8 vol. f°. Amsterdam. 1732–1737.

Vol. i, tab. 53, figs. 23–25, p. 68, gives figures of a beetle and odonate larva from Oeningen, and an odonate from Verona, which Heer afterwards determines. Original edition not seen.

Schilling, Peter Samuel. See **Gravenhorst**, J. L. K.

Schlechtendal, D. von. Mittheilungen über die in der sammlung aufbewahrten originale zu Germar's "Insekten in bernstein eingeschlossen" mit rücksicht auf Giebel's "Fauna der vorwelt." (Zeitschr. ges. naturw., 61: 473–491.) 8°. Berlin. 1888.

Subjects nearly all the originals of Germar's paper to a new and careful study, with one or two new illustrations.

Schmidt, Wilhelm Ludwig Ewald. See **Rathke**, M. H.

Schöberlin, Edmund. Der Oeningen stinkschiefer und seine insektenreste. (Soc. entom., 3: 42, 51, 61, 68–69.) 4°. Zürich. 1888.

A general account of the insects found at Oeningen, based mainly on Heer's researches. Nearly eleven hundred species are now known and several genera are here for the first time recorded, the result of studies by Lindner, Massmann, and Scherper.

Schweigger, August Friedrich. Beobachtungen auf naturhistorischen reisen; anatomisch-physiologische untersuchungen über corallen; nebst einem anhange, bemerkungen über den bernstein enthaltend. 4°. Berlin. 1819. pp. 8, 128, (4), pl. 8, tab. 12.

The Bemerkungen über den bernstein occupy pp. 101–127 and pl. 8, and contain in foot-notes extended descriptions of a few insects, figured carefully on the plate, but part at least of which have since been recognized as copal insects.

Scudder, S. H. Results of an examination of a small collection of fossil insects obtained by Prof. William Denton in the tertiary beds of Green River, Colorado. (Proc. Bost. soc, nat. hist., 11: 117–118.) 8°. Boston. 1867.

The same: with slight additions and without title. (Hollister, Mines of Colorado, pp. 380–383.) 12°. Springfield. 1867.

A bare statement of the relations of the insects. An abstract occurs in Amer. nat., 1: 56. 8°. Salem. 1867.

——— [Fossil insects found at the petrified fish-cut, Green River.] (Hayden, Sun pict. Rocky mount. scen., p. 98.) 4°. New York. 1870.

Mentions in general terms the affinities of an ant and a couple of flies.

——— Fossil insects from the Rocky Mountains. 8°. Salem. 1872. pp. 4. (Amer. nat., 6: 665–668.) 8°. Salem. 1872.

A general notice of a collection of insects made by Richardson in the tertiary Green River deposits of Wyoming. Noticed in Trans. ent. soc. Lond., (2), 1874, 47–48. 8°. London. 1874.

——— The insects of the tertiary beds at Quesnel (British Columbia). 8°. [Montreal. 1877.] pp. 15. (Rep. progr. geol. surv. Can., 1875–'76, 266–280.) 8°. [Montreal.] 1877.

Describes twenty-four species of various orders.

Scudder, S. H.—Continued.

TRANSLATION: Les insectes des lits tertiaires de Quesnel. (Rapp. opér. expl. géol. Can., 1875–'76, 294–310.) 8°. [Montreal.] 1877.

——— The first discovered traces of fossil insects in the American tertiaries. (Bull. U. S. geol. geogr. surv. terr., 3: 741–762.) 8°. Washington. 1877.

Describes the insects obtained by Denton in the White River beds, Colorado. Thirty-three species, mostly Diptera, are described and others enumerated.

——— Additions to the insect fauna of the tertiary beds at Quesnel (British Columbia). 8°. [Montreal. 1878.] pp. 8. (Rep. progr. geol. surv. Can., 1876–'77, 457–464.) 8°. [Montreal.] 1878.

Describes six more species of different groups.

TRANSLATION: Additions à la faune entomologique des lits tertiaires de Quesnel, Colombie britannique. (Rapp. opér. comm. géol. Can., 1876–'77, 514–522.) 8°. [Montreal.] 1878.

——— An account of some insects of unusual interest from the tertiary rocks of Colorado and Wyoming. (Bull. U. S. geol. geogr. surv. terr., 4: 519–543.) 8°. Washington. 1878.

Describes ten insects of different orders, among them a remarkably perfect butterfly, Prodryas persephone, and eggs and egg clusters of a gigantic sialid, Corydalites fecundum, the last from the Laramie beds.

——— The fossil insects of the Green River shales. (Bull. U. S. geol. geogr. surv. terr., 4: 747–776.) 8°. Washington. 1878.

Describes fifty-five species of different groups with notes on seventeen others.

——— The fossil insects collected in 1877, by Mr. G. M. Dawson, in the interior of British Columbia. (Rep. progr. geol. surv. Can., 1877–'78, B: 176–186.) 8°. Montreal. 1879.

Describes sixteen species of different orders. Also published separately with half-title on cover: Insects from the tertiary beds of the Nicola and Similkameen rivers, British Columbia. 8°. [Montreal. 1879.] pp. 11.

TRANSLATION: Insectes fossiles recueillis en 1877, par M. G. M. Dawson, dans l'intérieur de la Colombie-britannique. (Rapp. opér. comm. géol. Can., 1877–'78, B: 211–223.) 8°. [Montreal. 1879.]

Scudder, S. H.—Continued.

——— The insect basin of Florissant. (Psyche, 3: 77.) 8°. Cambridge. 1880.

Exhibition of plates of fossils.

——— The tertiary lake basin at Florissant, Colorado, between South and Hayden Parks. (Bull. U. S. geol. geogr. surv. terr., 6: 279–300, map.) 8°. Washington. 1881.

The first half is descriptive of the locality and its geology; the paleontological portion is mainly devoted to insects and plants, of which a running systematic review is given. The conclusion is reached that the beds, the most prolific of insects in the world, "belong in or near the oligocene." An abstract will be found in Harv. univ. bull., 2: 267. 4°. Cambridge. 1881. It was also read before the Natural History Society of Boston. (Proc. Bost. soc. nat. hist., 21: 81.) 8°. Boston. 1881.

EXTRACT: Insects of the amyzon shales of Colorado. (Amer. nat., 16: 159–160.) 8°. Philadelphia. 1882.

Quotes some of the general results obtained.

REPRINT: with same title as original. (Twelfth Rep. U. S. geol. geogr. surv. terr., 1878: 271–293, map.) 8°. Washington. 1883.

Contains considerable additions, especially in the Arachnida and Neuroptera, where comparisons are instituted with European and other American fossils.

It is also reprinted with slight additions and omissions in the introduction to the author's Tertiary Insects of North America, 1890.

——— Administrative report U. S. geological survey for the year 1885–1886. (Ann. rep. U. S. geol. surv., 7: 127.) 8°. Washington. 1888.

Progress of work on tertiary Coleoptera and Diptera.

See also Section VII*f*.

——— The fossil insect localities in the Rocky Mountain region. (Psyche, 5: 362.) 4°. Cambridge. 1890.

The relative abundance of individuals in the various orders of insects and especially in the Hymenoptera and Coleoptera is very different at Florissant from what it is at the other localities, while the latter are similar to one another.

——— The tertiary insects of North America. pp. 734, pl. 28. 4°. Washington. 1890. (Rep. U. S. geol. geogr. surv. terr., xiii.)

Forms vol. 2. of the Fossil insects of North America.

Treats in full the Myriapoda, Arachnida, and lower orders of Hexapoda from all American tertiary deposits, while in the Coleoptera, Diptera, and Hymenoptera, only the species found elsewhere than at Florissant are described. It includes of Myriapoda 1 sp., Arachnida 34, Neuroptera 66, Orthoptera 30, Hemiptera 266, Coleoptera 112, Diptera 79, Lepidoptera 1, and Hymenoptera 23, in all 612 species. All are displayed in a tabular view at the end. A few notes occur on European species.

——— See also **Peale**, A. C.

Selwyn, Alfred R. C., and **Dawson**, George Mercer. Descriptive sketch of the physical geography and geology of the Dominion of Canada. 8°. Montreal. 1884. 55 pp.

Copies, p. 55, the statement in Dawson's paper, q. v.

Sendel, Nathaniel. De succino indico, ad virum nobilissimum atque experientissimum dominum Johannem Philippum Breynium epistola, prodromi loco electrologiae suae propediem edendae scripta. (Breyn. Melon. petref. mont. Carmel, 35–48.) 4°. Lipsiae. 1722.

Entitled on Breyn's title-page: De pseudo-succino, quod paucos ante annos ex Africa in Belgium deferri coepit. It evidently refers to copal, and mentions, p. 40, the occurrence of insects "nostris similia." Noticed in Bibl. germ., 5: 121.

——— Verschiedene erinnerungen von dem succino prussico. (Contin. gelehrt. Preussen, 1725, quart. 2, no. 3.) 8°. Thorn. 1725.

Not seen. Title furnished by Dr. Hagen.

——— Nathanaelis Sendelii . . . electrologiae per varia tentamina historica ac physica continuandae missus primus De perfectione succinorum operibus naturae et artis promota testimoniisque rationis et experientiae demonstrata. 4°. Elbingae 1725. pp. 56.

Reviewed in Acta. erud., 1725, 374–376. 4°. Lipsiae. 1725.

The same. Missus secundus, De mollitie succinorum et inde emergentibus contentis variis animalibus, vegetabilibus, mineralibus atque aquosis. 4°. Elbingae. 1726. pp. 64.

The same. Missus tertius, De prosapia succinorum et eorum variis affectionibus, vi electrica, colore, odore, sapore. 4°. Elbingae. [1728.] pp. 56.

These titles are furnished by Dr. Hagen, who also quotes, but unverified by him, the English translation in Acta germ., 1743, 340–353, 360–366, 389–405. 4°. London. 1743.

Sendel, N.—Continued.

——— Historia succinorum corpora aliena involventium et naturae opere pictorum et caelatorum ex regiis Augustorum cimeliis Dresdae conditis aeri insculptorum conscripta. 1°. Lipsiae. 1742. pp. 10, 328, tab. 13.

A large part of the book and nearly seven of the plates are given up to insects, but amber and copal insects are, as is well known, not distinguished, and the book has therefore far less value and interest than it otherwise would possess.

Reviewed in Nova acta erud., 1743, 49–56. 4°. Leipzig. 1743 (the insects mentioned on pp. 50–52); also, according to Boehmer (references unverified) in Nouv. bibl. germ., 3: 1; 6: 385; Commerc. litt. med. sc. nat., 23: 177. 4°. Norimbergiae. 1742;—Leipz. gel. zeit., 1742, 414. 8°. Leipzig. 1742;—Zuverl. nachr. gegenw. zust. wiss., 34: 778. 8°. Leipzig.

See also **Guérin-Méneville, F. E.**, in Section I.

Serres, Pierre Marcel Toussaint de. Suite du Mémoire sur les terrains d'eau douce, ainsi que sur les animaux et les plantes qui vivent alternativement dans les eaux douces et dans les eaux salées. (Journ. phys., 87: 161–178.) 4°. Paris. 1818.

Refers, p. 173, to impressions of insects, principally apterous and among them iulids, from the tertiaries of Castelnaud, France.

——— Note sur les arachnides et les insectes fossiles, et spécialement sur ceux des terrains d'eau douce. (Ann. sc. nat., 15: 98–108.) 8°. Paris. 1828. (Ferr., Bull. sc. nat., 15: 181–189.) 8°. Paris. 1828.

An extract from the next work, pp. 207–233, published in advance.

TRANSLATION: Bemerkung über die fossilen arachniden und insecten, besonders über diejenigen, welche in der süsswasserformation vorkommen. (Thon, Entom. archiv., 2, ii: 74–77.) 4°. Jena. 1829.

ABSTRACT: Notiz über fossile arachniden und insecten, und besonders über diejenigen, welche in den niederschlägen des süssen wassers gefunden werden. (Froriep, Notiz. geb. nat.- u. heilk., 22: 337–342.) 4°. Erfurt. 1828.

——— Géognosie des terrains tertiaires, ou Tableau des principaux animaux invertébrés des terrains marins tertiaires, du midi de la France, etc. 8°. Montpellier et Paris. 1829. pp. 92, 277, tableaux 3, pl. 6.

Serres, P. M. T. de—Continued.

Livre 4: Des arachnides et insectes fossiles, et spécialement de ceux des terrains d'eau douce du bassin tertiaire d'Aix, occupies pp. 206–258, and includes a list of nearly 80 genera of Aix insects, besides, pp. 254–258, a Tableau général des arachnides et des insectes fossiles, d'après l'ordre de formations géologiques, in which 105 genera are specified and 226 species enumerated.

——— Notes géologiques sur la Provence. (Actes. soc. linn. Bord., 13: 1–82.) 8°. Bordeaux. 1843.

Contains a list of insects of Aix, pp. 34–44.

——— Note additionnelle à la Notice géologique sur la Provence. (Actes soc. linn. Bord., 13: 83–91.) 8°. Bordeaux. 1843.

Continuation of preceding, but with nothing on insects.

Shuckard, William Ed. See **Burmeister, H.**

Sivers, Henricus Jacobus. Cvriosorvm niendorpiensivm. 4°. Lvbecae. 1732.

Specimen IV, sistens svccinorvm descriptionem occcupies pp. 65–81, with a plate. Reference furnished by Dr. Hagen.

Smith, E. J. A'Court. Discovery of remains of plants and insects. (Nature, 11: 88.) 4°. London. 1874.

Notice of fossil insects in the tertiary beds at Gurnet Bay, Isle of Wight.

Smith, Frederick. See **Woodward, H.**; and **Zaddach, E. G.**

Sordelli, F. Note sopra alcuni insetti fossili di Lombardia. 8°. Firenze. 1882. 12 pp. (Bull. soc. entom. ital., 14: 224–235.) 8°. Firenze. 1882.

Scattered notes and descriptions of insects from late tertiary, particularly pleistocene deposits.

Stainton, Henry Tibbats. See **Bolton, J.**

Stein, Johann Philipp Emil Friedrich. Drei merkwürdige bernstein-insecten. (Mitth. münch. entom. ver., 1: 28–30.) 8°. München. 1877.

Describes two Coleoptera and one Hymenopteron (Myrmar).

Steinbeck, A. Ueber die bernsteingewinnung bei Brandenburg an der Havel. 12°. Brandenburg. 1841. (Neue not. natur- heilk., 14: 257–263.) 4°. Weimar. 1840.

Separate publication not seen. Notices, p. 262, collections of amber insects made by Schirrmeister and himself, showing the fauna to be the same as that of the amber of the Baltic coast.

Steinbeck, A.—Continued.

An abstract will be found in Neues jahrb. mineral., 1844, 121-122. 8°. Stuttgart. 1844.

Sternberg, K. Insektengänge im blatte der Flabellaria borassifolia. (Verhandl. gesellsch. vaterl. mus. Böhm., 1836: 34-35, pl. 1, figs. 3-4.) 16°. Prag. 1836.

Showing mines of an insect "ganz so, wie es die larven der blattschaben in dem parenchym der blätter jetzweltlicher pflanzen hinterlassen."

Stizenberger, Ernst. Uebersicht der versteinerungen des grossherzogthums Baden. 8°. Freiburg i. B. 1851. pp. 144.

A list of Oeningen insects compiled from the first two parts of Heer's work occurs on pp. 95-101 with references to collections; and on p. 119 a reference to eggs and larvæ of beetles and flies from the alluvium of the Rhine.

Tournal. [Tertiary of Arnissan.]

Tournal is said to have published some reference to fossil insects in a work on the above subject. I have been unable to verify it.

Troost, Gerard. Description of a variety of amber, and of a fossil substance supposed to be the nest of an insect discovered at Cape Sable, Magothy River, Ann-Arundel County, Maryland. (Amer. journ. sc. arts, 3: 8-15.) 8°. New Haven. 1821.

Considers the nest found in a stratum of lignite, and which is described on pp. 10-11, to be "a kind of comb or nidus made by some insects around the twigs . . . of a tree."

TRANSLATION: Bernstein mit gall-insekten nestern vorkommend in Maryland in Nord-Amerika nach dem Dr. Troost zu Baltimore, frei bearbeitet von Gilbert. (Ann. phys., 70: 297-303.) 8°. Leipzig. 1822.

Accompanied by a foot-note by Gilbert, and followed, pp. 303-304, by a Zusatz zu diesem aufsatze by the same, in which certain similar appearances in European amber are noted. Gilbert considers them galls.

TRANSLATION: Ueber das vorkommen des bernsteins zu Cap-Sable in Nord-Amerika. (Jahrb. chem. phys., 4 [Journ. chem. phys., 34]: 434-439.) 16°. Nürnberg. 1822.

The final notes are omitted and the phraseology slightly altered.

ABSTRACT: Vorkommen des bernsteins in Nord-Amerika. (Arch. bergb. hüttenw., 6: 416.) 16°. Berlin. 1822.

Makes no reference to the "insect nests."

TRANSLATION: Beschreibung einer varietät von bernstein (amber) und eines fossils, wahrscheinlich des nestes eines insekts, entdeckt bei Cap Sable, am Magothy-fluss, in Ann Arundel County, Maryland. (Schrift. phys.-ökon. gesellsch. Königsb., 11: 54-58.) 4°. Königsberg. 1871.

The translation, which is by Dr. Hagen, omits only about a page of unimportant matter in the concluding notes. It is embodied in an article by Dr. Berendt, entitled Ueber eine von Dr. G. Troost in Baltimore im jahre 1821 im American-journal of science gegebene beschreibung eines bernsteinvorkommens bei Cap Sable in Maryland; and is preceded and followed by remarks of Dr. Berendt, which, however, do not refer to the insect nests.

——— See also **Ballenstedt**, J. G. J.; and **Hagen**, H. A.

Unger, Franz. Ueber die pflanzen und insekten reste von Radoboj in Kroatien. (Unger, Reise notizen, 1838, 26-33.) 8°. [Wien. 1840?]

Not seen; an abstract will be found in Neues jahrb. miner., 1840, 374-377. 8°. Stuttgart. 1840. Insects are mentioned on p. 377; there are no Coleoptera nor Lepidoptera; Diptera and Hymenoptera are most abundant; Neuroptera, Orthoptera and Hemiptera rarer. A single spider was found. The fauna is tropical rather than European.

The Reise notizen are referred to in no bibliographies. They appeared separately for 1838 and 1839, and were probably extracts from some local paper. Cf. Neues jahrb. mineral., 1840, 726.

——— Chloris protogaea. Beiträge zur flora der vorwelt. f°. Leipzig. 1840-'47. Heft 1, pp. 4, 4, 1-16, pl. 1-5 (1840);—heft 2-3, pp. 5-24, 17-44, pl. 6-15 (1842);—heft 4-5, pp. 45-92, pl. 16-25 (1843);—heft 6-7, pp. 25-110, pl. 26-35 (1845);—heft 8-10, t. p., ded., pp. 93-150, pl. 36-50 (1847).

Insects are figured on pl. 4, 5, 11, 14, 15, 22, 28, 40, 44, 45, 48. All are from Radoboj.

——— See also **Heer**, O.

Vaillant, Léon. Sur un geckotien de l'ambre jaune. (Bull. soc. philom. Paris, 10: 65-67.) 8°. Paris. 1873.

Mentions, p. 67, a couple of insects accompanying the reptile, afterwards more fully treated by Oustalet.

Valentini, Michael Bernhard. Museum museorum oder Vollständige schau bühne aller materialien und specereyen etc. Zweyte edition. 3 v. f°. Franckfurt am Mayn. 1714. Vol. 1, 3 t. p., pp. (24), 520 (16), 76, (4), 119;—vol. 2, 3 t. p., pp.

Valentini, M. B.—Continued. (18), 196, (4), 116;—vol. 3, pp. (4), 218, (12), plts., figs.

Also with the title: D. Valentini schau bühne oder Natur- und materialien-kammer, auch ostindianische send-schreiben und rapporten. Contains various references to insects in amber, original or quoted; see especially i. p. 516, ii. p. 60, and ii. anhang, pp. 93, 99.

Vogel, Rudolf Augustin. Practisches mineral-system. Zweyte vermehrte und verbesserte ausgabe. 8°. Leipzig. 1776. pp. (22), 582.

Not seen. The first edition was published in 1762, and is said to contain reference to Oeningen insects.

Walch, Johann Ernst Immanuel. See **Knorr**, G. W.

Walchner, Friedrich August. Darstellung der geologischen verhältnisse des süsswasser-mergels von Oeningen im badischen seekreis und seiner fossilen flora und fauna. 8°. Karlsruhe. 1850.

Separately printed from his Handbuch der geognosie zum gebrauche bei seinen vorlesungen, und zum selbststudium, mit besonderer berücksichtigung der geognostischen verhältnisse des grossherzogthum Baden. 2e. aufl. 8°. Karlsruhe. 1847–1851. (pp. 956 et seq.) Neither seen.

——— Darstellung der geologischen verhältnisse des mainzer tertiärbeckens und seiner fossilen fauna und flora. 8°. Carlsruhe. 1850. pp. 75.

Contains, p. 57, a list of insects referred to twelve genera, only two of the species receiving names,—Phryganea mombachiana and P. blumi. Separately printed from his Handbuch der geognosie, etc., as above. 2e. aufl. 8°. Karlsruhe. 1847–51.

Walker, John Francis. Fossil insects in the Bournemouth leaf beds. (Geol. mag., 7: 240.) 8°. London. 1870.

A bibliographical reference.

Wanklyn, A. Description of some new species of fossil ferns from the Bournemouth leaf-bed. (Ann. mag. nat. hist., (4), 3: 10–12, pl. 1.) 8°. London. 1869.

Mentions an undetermined insect.

Westwood, J. O. See **Jones**, T. R.

Wiedemann, Christian Rudolph Wilhelm. See **Rathke**, M. H.

Wigand, Johannes. Vera historia de succino borvssico. De alce borvssica & de herbis in Borussia nascentibus. Item de sale creatvra Dei salvberrima consideratio methodica & theologica per Iohannem VVigandvm D. Qvondam episcopum pomezaniensem. Iam vero primvm in studiosae iuuentutis gratiam in lucem edita. Studio et opera Iohannis Rosini pastoris vvickerstadensis. 12°. Ienae. [MD]XC, ff. (12), 153, (5).

In a section: De vermiculis in succino, ff. 26–29, he mentions culices, formicae, aranei parui papiliones.

Woodward, H. On the occurrence of Branchipus (or Chirocephalus) in a fossil state, associated with Archaeoniscus and with numerous insect remains in the eocene fresh-water limestone of Gurnet Bay, Isle of Wight. (Geol. mag., n. s., 5: 88–89.) 8°. London. 1878.

Abstract of the next, with slightly differing title, but published earlier than it, and containing a fuller list of insects.

——— On the occurence of Branchipus (or Chirocephalus) in a fossil state, associated with Eosphæroma and with numerous insect remains in the eocene fresh-water (Bembridge) limestone of Gurnet Bay, Isle of Wight. (Quart. journ. geol. soc. Lond., 35: 342–350, pl. 14.) 8°. London. 1879.

The insects are mentioned on p. 344, mostly in a List of insect remains from Gurnet Bay, near Cowes, Isle of Wight, determined by the late Frederick Smith. One hundred and twenty-five specimens are mentioned but only eighteen genera or families are specified and one species.

Zaddach, Ernst Gustav. Ueber die bernstein- und braunkohlenlager des Samlandes; erste abhandlung. (Schrift. phys.-ökon. gesellsch. Königsb., 1: 1-44, pl. 1–4.) 4°. Königsberg. 1860.

Notices, pp. 3–4, the numbers of insects found in amber, all distinct from living forms; and on pp. 20–21 gives a table of the number of genera and species of the different orders of insects, with special mention of the remarkable genera Archæa and Amphientomum.

——— Amber; its origin and history, as illustrated by the geology of Samland. (Quart. journ. science, 5: 167–185, pl. (2).) 8°. London 1868.

Mainly compiled from the author's previous writings on the amber beds. It contains, however, as new matter, a plate of amber insects with explanation by Frederick Smith, and on pp. 184–185, a list of the principal works on amber and the organic remains preserved in it, furnished by the editors.

⁂ Ami **Boué** is said to have been the first (Journ. geol., 3: 105) to have referred to the insects of Radoboj, but I have been unable to verify the reference; and John **Ray** is stated to have made some references to fossil insects on pp. 78 and 92 of his Historia insectorum; but I have examined the work for such references unsuccessfully.

VII.—SPECIAL FOR CENOZOIC TIME.

VIIa.—Cenozoic Myriapoda.

⁂ See also under Section I and Section VI.

Bertkau, P. Einige spinnen und ein myriapode aus der braunkohle von Rott. (Verhandl. naturh. verein preuss. Rheinl. u. Westf., (4), 5: 346–360, taf. 5.) 8°. Bonn. 1878.

Describes and figures Julus antiquus Heyd. MSS. See same title in Section VII*b*.

Cotta, Bernhard. Ueber Julus terrestris, als jugendliche versteinerung. (Neues jahrb. f. miner., 1833, 392–394, pl. 5.) 8°. Stuttgart. 1833.

Description and figure of this species as found fossil near Dresden in kalksintergänge in gneiss. Münster, loc. cit., p. 68, speaks of these as lituiten-artige röhre.

Heyden, C. von. See **Bertkau**, P.

Münster, G. See **Cotta**, B.

VII b.—Cenozoic Arachnida.

⁂ See also under Section I and Section VI.

Bertkau, P. Einige spinnen und ein myriapode aus der braunkohle von Rott. (Verhandl. naturh. verein preuss. Rheinl. u. Westf., (4), 5: 346–360. taf. 5.) 8°. Bonn. 1878.

A careful description of eight species, of which six are new; all are figured. See same title in Section VII*a*.

——— Ueber einige fossile arthropodenreste aus der braunkohle von Rott. (Sitzungsb. niederrhein. gesellsch. Bonn, 1878, 70–71.) 8°. Bonn. 1878.

Principally concerned with the arachnids described in his previous paper, and especially with Argyronenta antiqua.

Breyn, Johann Philipp. Observatio de succinea gleba, plantæ cujusdam folio impregnata, rarissima. (Phil. trans., 34; 154–156, pl., fig. 2.) 4°. London. 1728.

Mentions a spider in amber. See same title in Section VII*g*.

Brongniart, C. J. E. Note sur une Aranéide fossile des terrains tertiaires d'Aix (Provence). (Ann. soc. ent. France, (5), 7: 221–224, pl. 7, i.) 8°. Paris. 1877.

Describes Attoides eresiformis. Noticed by Dr. Hector George in the Feuilleton of Le constitutionnel for 21 Nov., 1877. See also Girard, M.

George, H. See **Brongniart**, C. J. E.

G[irard], M. Une très-ancienne araignée. (La nature, 6: 144, figs. 1–4.) 4°. Paris. 1878.

A popular account of Attoides eresiformis described by Brongniart.

Gourret, Paul. Recherches sur les arachnides tertiaires d'Aix en Provence. (Rec. zool. suisse, 4: 431–496, pl. 20–23.) 8°. Geneva. 1887.

Describes twenty-three species, almost all referred to new genera. Besides the Araneidea, there are two Acari, two Opiliones, and one pedipalp. A discussion of their faunal relations at the close concludes them to have close affinities with Mediterranean forms.

Heyden, C. von. Nachricht von fossilen gallen auf blättern aus den braunkohlengruben von Salzhausen. (Ber. oberhess. gesellsch. nat.- heilk., 8: 63.) 8°. Giessen. 1860.

Probably the gall of a Phytoptus, on Salix.

Karsch, F. Neue milben in bernstein. (Berl. entom. zeitschr., 28: 175–176, figs.) 8°. Berlin. 1884.

Three species of Nothrus described.

McCook, H. C. A new fossil spider, Eoatypus woodwardii. (Proc. acad. nat. sc. Philad., 1888, 200–202, 2 figs.) 8°. Philadelphia. 1888.

One of the Atypinæ from the Isle of Wight.

Menge, A. Ueber die scheerenspinnen, Chernetidæ. 4°. [Danzig. 1855.] pp. 43, pl. 5. (Neueste schrift. naturf. gesellsch. Danzig, 15, heft 2, [art. 2].) 4°. Danzig. 1855.

Seven of the fifteen species described and figured are from amber.

Menge, A.—Continued.

——— Ueber einen scorpion und zwei spinnen im bernstein. 8°. Danzig. 1869. pp. 9, 3 figs. (Schrift. naturf. gesellsch. Danzig, (2), 2, no. 10.) 8°. Danzig. 1869.

Detailed description and figures of Tityus eogenus, Cloetes priscus, and Gerdia myura.

Scudder, S. H. Fossil spiders. (Harv. univ. bull., 2: 302–303.) 8°. Cambridge. 1882.

Reviews the arachnid fauna of Florissant, Col., and shows its relation to the forms of the European tertiaries.

REPRINT: Our knowledge of fossil spiders. (Field natur., 1: 61–63.) sm. 4°. Manchester (Engl.), 1882.

Simon, Eugène. Description d'un genre nouveau d'Arachnides et remarques sur la famille des Archæidæ. 8°. Genova. [1884.] pp. 6, figs. 1–5. (Ann. mus. civ. stor. nat., 20: 182–187, figs. 1–5.) 8°. Genova. [1884.]

Eriauchemus of Madagascar and Landana of Kongo are placed with Archæa from amber in the family Archæidæ.

——— Note complémentaire sur la famille des Archæidæ. 8°. Genova. 1884. pp. 8, figs. 1–7. (Ann. mus. civ. stor. nat., 20: 373–380, figs. 1–7.) 8°. Genova. 1884.

Describes and figures Archæa pougneti from amber.

Turpin, Pierre Jean François. Note sur le terrain qui contient le tripoli de Bilin, en Bohême, par M. Élie de Beaumont; suivie de l'examen des débris organiques que renferme une des couches de ce terrain, par M. Turpin. (Comptes rendus acad. sc., 7: 501–503.) 4°. Paris. 1838.

The Note de M. Turpin occupies pp. 502–503. Mention is made, p. 502, of the leg of an insect "très probablement d'un Acarus," as found in the earth.

Walckenaer, C. A. Tableau des aranéides, ou caractères essentiels des tribus, genres, familles et races que renferme le genre Aranea de Linné, avec la désignation des espèces comprises dans chacune de ces divisions. 8°. Paris. 1805. pp. 4, 12, 88, tabl. pl. 9.

On p. 25 catalogues without description Attus fossilis from amber.

VIIc.—Cenozoic Neuroptera.

⁂ See also under Section I and Section VI.

Andrae, K. J. Beiträge zur kenntnisse der fossilen flora Siebenbürgens und des Banates. Mit zwölf tafeln. pp. 1–48, pl. 1–12. (Abhandl. k. k. geol. reichsanst. Wien, bd. 2, abth. 3, no. 4.) 4°. Wien. 1855.

Figures a Chrysopa, pl. 5, fig. 3, 3a, from Thalheim, with mention on p. 26. See same title in Section VIIi.

Berendt, G. C. See **Pictet de la Rive**, F. J., and **Hagen**, H. A.

Bosc, Louis [Augustin Guillaume]. Note sur une fossile remarquable de la montagne de Saint-Géraud-le-Puy, entre Moulins et Roanne, département de l'Allier, appelé l'indusie tubuleuse. (Journ. d. mines, 17: 397–400, pl. 7.) 8°. Paris. an xiii.

The first notice of the remarkable caddis-fly cases of Auvergne, forming the beds of so-called indusial limestone.

Bosniaska, S. de. La formazione gessosso-solfifera e il secondo piano mediterraneo in Italia. (Atti. soc. tosc. sc. nat., 2, proc. verb., 90–100.) 8°. Pisa. 1880.

Refers, p. 93, to Libellula doris and other insects as occurring at two horizons.

Brauer, F. Verzeichniss der bis jetzt bekannten neuropteren im sinne Linné's. pp. 90. n. d. (Verhandl. k. k. zool.-bot. gesellsch. Wien., 18: 359–416, 711–742.) 8°. Wien. 1868.

Includes the fossil genera and species, and contains, p. 738 (86), a list of the fossil Libellulina.

——— See also **Hagen**, H. A.

Brongniart, A. Sur les terrains qui paroissent avoir été formés sous l'eau douce. (Ann. mus. hist. nat., 15: 357–405, pl. 23–24.) 4°. Paris. 1810.

Discusses Indusia tubulata on pp. 392–393.

Capellini, G. La formazione gessosa di Castellina marittima e i suoi fossili. (Mem. accad. sc. ist. Bologna, (3), 4: 525–603, pl. 1–9.) 4°. Bologna. 1873.

On pp. 539 and 557 catalogues Libellula doris Heer (larva) from Limone, etc.

——— Nota sulla geologia toscana. (Rend. sess. accad. sc. ist. Bologna, 1874–'75, 22–24.) 8°. Bologna. 1875.

Refers, p. 24, to the occurrence of larvæ of a Libellula in tertiary beds near Pane e Vino.

Capellini, G.—Continued.

——— Nuove ricerche sul calcare a amphistegina strati a congeria e calcare di leitha dei Monti Livornesi. (Rend. sess. accad. sc. ist. Bologna, 1874–75, 130–135.) 8°. Bologna. 1875.

Refers, p. 133, to the occurrence of the larvæ of Libellula at Limone, etc.

Croizet, *l'abbé*. Mémoire sur des débris fossiles de l'Auvergne. Analyse. (Bull. soc. géol. France, 4: 22–26.) 8°. Paris. 1833.

Refers briefly, p. 25, to the Indusia tubulata of Auvergne.

——— Quelques observations sur le Puy de Corent. (Ann. acad. Clerm. Ferr., 11: 135–155.) 8°. Clermond Ferrand. 1838.

Not seen; said to refer to the caddis fly cases of the indusial limestone of Auvergne.

——— et Jobert, *aîné*. Recherches sur les ossemens fossiles du département du Puy-de-Dôme. 4°. Paris. 1828. pp. (8), 224, (2), map, sect. 8, pl. 48, in several series.

Refers, p. 25, to the occurrence of Indusia tubulata in the calcareous marls of the Auvergne tertiaries.

Defrance, J. L. M. Indusie. (Dict. sc. nat., 23: 411–412.) 8°. Paris. 1822.

Notice of the indusial limestone of Auvergne, and the fossil phryganid cases of which it is composed.

Giard, A. Les coléoptères fossiles d'Auvergne par M. Oustalet; remarques critiques. (Bull. scient. dép. Nord, (2), 1: 56–62, 109–118.) 8°. Lille. 1878.

The Neuroptera as well as the Coleoptera are discussed. See same title in Section VII*f*.

Goss, H. Notes on a fossil wing of a dragon fly, from the Bornemouth leaf beds. (Entom., 11: 193-195, fig.) 8°. London. 1878.

Referred to Æschna.

Hagen, H. A. Ueber die neuropteren der bernstein fauna. (Verhandl. zool.-bot. ver. Wien, 4: 221–232.) 8°. Wien. 1854.

A systematic review of the nearly 900 specimens examined by the author. The Sitzungsberichte of the same volume, pp. 76–78, contain the remarks of Brauer, comparing the results reached by Hagen with those of Loew and Göppert for Diptera and plants; and the comments of von Hauer, who indicates the places where amber is said to occur in older formations, but never with insect or plant remains.

Hagen, H. A.—Continued.

——— Zwei libellen aus der braunkohle von Sieblos. (Palæontogr., 5: 121–124, tab. 24.) 4°. Cassel. 1858.

Description of Heterophlebia jucunda and Lestes vicina.

——— Ascalaphus proavus aus der rheinischen braunkohle. (Palaeontogr., 5: 125–126, tab. 25.) 4°. Cassel. 1858.

Detailed description and comparison with living forms.

——— Petalura? acutipennis aus der braunkohle von Sieblos. (Palaeontogr., 8: 22–26, taf. 3, figs. 1–4.) 4°. Cassel. 1859.

Detailed description, and discussion of its systematic position.

——— Neuroptern aus der braunkohle von Rott in Siebengebirge. (Palæontogr., 10: 247–269, taf. 43–45.) 4°. Cassel. 1863.

Extended descriptions of ten species, mostly Odonata, preceded by lists of the insects previously described from the Rhenish brown-coal.

——— Phryganidarum synopsis synonymica. 8°. Wien. 1864. pp. 92. (Verh. zool.-bot. gesellsch. Wien, 14: 799–890.) 8°. Wien. 1864.

Includes the fossil species, twenty-eight in number, of which ten belong to Polycentropus.

——— On some aberrant genera of Psocina. (Ent. monthl. mag., 2: 148–152, 170–172.) 8°. London. 1865–'66.

Describes two species from amber and three from copal, besides seven recent species, being all the ocellate species known.

Same title repeated in Section VIII.

——— Psocinorum et embidinorum synopsis. 8°. Wien. 1866. pp. 22. (Verh. zool.-bot. gesellsch. Wien, 16: 201–222.) 8°. Wien. 1866.

Includes the fossil species, 8 Psocina, 1 Embidina. See same title in Section VIII.

——— Hemerobidarum synopsis synonymica. (Stett. entom. zeit., 27: 369–462.) 16°. Stettin. 1866.

Includes the fossil species, fourteen in number.

——— Beiträge zur kenntniss der phryganiden. (Verh. zool.-bot. gesellsch. Wien, 23: 377–452.) 8°. Wien. 1873.

Hoeninghaus's description of Phryganea mombachiana is copied on p. 379, and the insect considered as probably belonging to the Phryganidæ proper.

——— On amber Psocina from Prussia. (Psyche, 3: 279.) 4°. Cambridge. 1882.

Concludes from them that before tertiary times a great development of genera and species had occurred.

Hagen, H. A.—Continued.

——— Beiträge zur monographie der psociden. *At first entitled:* Ueber psociden in bernstein. (Stett. ent. zeit., 43: 217-238, 265-300, 524-526, taf. 1-2: 44: 285-332.) 16°. Stettin. 1882-1883.

Contains a section, Ueber psociden im bernstein, which by error (see p. 265) was printed first under that title. This section is also entitled Bernstein psociden and includes all the portion published in 1882, thirteen species and nine genera (two of them new) being described, while pp. 292-300 are occupied with general considerations drawn from their study.

——— Monograph of the Embidina. (Can. ent., 17: 141-155, 171-178, 190-199, 206-229.) 8°. London (Ont.). 1885.

Extra copies form pp. 141-155, 1-8, 1-10, 1-23. See p. 18 [224].

Describes anew, p. 176 (6), Embia antiqua from amber and refers it to Oligotoma, and under the head of Distribution, p. 223 (17), has a few further words upon it.

——— See also **Pictet de la Rive**, F. J., und **Hagen**, H. A.; also ⊙.

Hauer, Franz, *ritter* von. See **Hagen** H. A.

Heer, O. Ueber vorweltliche florfliegen. (Mittheil. naturf. gesellsch. Zürich, 1, ii: 52-54.) 8°. Zürich. 1848.

A brief notice of the fossil dragon-flies of Oeningen and Radoboj.

Hepp, Philipp. Ueber die bei Dürkheim aufgefundene versteinerte phryganeen gehäuse. (Jahresb. Pollich., 2: 19-23.) 8°. Neustadt a. d. Haardt. 1844.

An abstract is given in Oken's Isis for 1846, p. 70.

Heyden, C. von. See **Stoehr**, E.

Hoeninghaus, Friedrich Wilhelm. Phryganea mombachiana. 4°. Crefeld. 1844. 1 engr. p. with illustr.

Text in German, accompanied by a French translation of the text (with no heading), 1 p. 8°. See also **Hagen**, H. A.; and **Michelin**, H.

Jobert, *aîné*. See **Croizet et Jobert**.

König, Charles. Icones fossilium sectiles. Centuria prima. f°. (London. 1825.) no t. p., pp. (4), pl. 19.

Figures on pl. 2 a dragon-fly larva from Oeningen under the name Libellula oeningensis. Two fascicles of this work appear to have been issued; one containing the text and eight plates, the other with eleven plates and no text, neither with title-page. The data given above are taken from de Koninck's copy in the Cambridge Museum.

Kolbe, H. J. Das phylogenetische alter der europäischen psocidengruppen. (Jahresb. westf. prov.-ver. wiss., 10: 18-27.) 8°. Münster. 1882.

Suggestive and interesting discussion of the relative geological age of the genera of Psocidæ with a classification in which these points are considered.

——— Neue beiträge zur kenntniss der psociden der bernstein fauna. (Stett. ent. zeit., 44: 186-191.) 16°. Stettin. 1883.

Describes one species each of Philotarsus and Elipsocus and gives a list of amber Psocidæ by groups.

——— Der entwickelungsgang der psociden im individuum und in der zeit. (Berl. ent. zeitschr., 28: 35-38.) 8°. Berlin. 1884.

Discussion of the different stages of development which the several groups of Psocidæ reach, with a consideration of the fossil forms, especially those from amber.

Kolenati, Friedrich August. Ueber phryganiden im bernstein. (Abhandl. böhm. gesellsch. wissensch., (5), 6: 15.) 4°. Prag. 1851.

Eight species or varieties are named but not described.

Lecoq, Henri. Les époques géologiques de l'Auvergne. 8°. 5 vol. Paris. 1867.

Not seen; according to Oustalet, he discusses Indusia in vol. 2, pp. 335 and 374.

McLachlan, R. [Indusial limestone exhibited.] (Proc. ent. soc. Lond., 1882: 18-19.) 8°. London. 1882.

The fossil larval-cases of which it is composed are referred to Limnophilidæ.

Mantell, G. A. A tabular arrangement of the organic remains of the county of Sussex. (Trans. geol. soc. Lond., (2), 3: 201-216.) 4°. London. 1829.

Reference is made on p. 201 to the occurrence of larval cases of Phryganidæ in the silt or blue clay of Lewes Levels.

Marion, Antoine Fortuné. See **Saporta**, G. de.

Massalongo, A. B. P. Sopra due larve fossili di Libellula dei terreni mioceni di Sinigallia. (Studii paleont., pp. 22-23, tab. 1, figs, 8-13.) 8°. Verona. 1856.

The larvæ are referred to two of Heer's species from Oeningen.

Menge, A. See **Pictet de la Rive**, F. J., und **Hagen**, H. A.

Meyer, C. E. H. von. Indusia. (Ersch u. Gruber, Allg. encycl. wissensch. u. künste, sect. 2, th. 18, s. 136.) 4°. Leipzig. 1840.

Description of the caddis-fly cases of Auvergne.

Michelin, H. [Sur] un travail imprimé de M. Hoeminghaus [sic], relatif à une espèce fossile du genre Phrygane. (Ann. soc. ent. France, (2), 3, bull. ent., 30–31.) 8°. Paris. 1845.

Mere mention of Phryganea grandis. See Hoeninghaus, F. W.

Ouchakoff, Nicolas. Notice sur un termes fossile. (Bull. soc. imp. nat. Mosc., 1838, 37–42, pl. 1.) 8°. Moscou. 1838. (Ann. sc. nat., (2), 13: 204–207, pl. 1 B.) 8°. Paris. 1840.

Description and general remarks.

TRANSLATION: Notice of a fossil termes. (Calc. journ. nat. hist., 2: 74–78.) 8°. Calcutta. 1842.

ABSTRACT: Notiz über eines fossilen termiten. (Neues jahrb. mineral., 1839, 122–123.) 8°. Stuttgart. 1839.

Oustalet, E. See **Giard**, A.

Pictet de la Rive, F. J. Résultat de ses recherches sur les insectes fossiles de l'ordre des névroptères contenus dans l'ambre. (Actes soc. helv. sc. nat., 30: 69–70.) 8°. Genève. 1845.

All specifically distinct from existing forms, but with one exception belonging to existing genera.

—— und **Hagen**, Hermann August. Die im bernstein befindlichen neuropteren der vorwelt. f°. Berlin. [1856.] t. p., pp. 41–125, pl. 5–8. (Berendt, Bernst. befindl. org. reste vorw., 2er bd., 1^{e} abth., pars.)

More than seventy species are described in full detail and admirably figured. Under the genera also Hagen gives good accounts of the literature of fossil species and prefaces the whole with general observations on the amber Neuroptera. The work is mostly Hagen's. Some descriptions are by Menge. Description of the larva of a Phasma is also appended, p. 122.

Planchon, Gustave. Étude des tufs de Montpellier au point de vue géologique et paléontologique. 4°. [Montpellier.] 1864.

Not seen; according to Oustalet mention is made of Indusia.

Rouville, Paul de. Géologie des environs de Montpellier. 1855.

Not seen; gives, according to Oustalet, some notice of the remains in the indusial limestone.

Saporta, G. de. Les organismes problématiques des anciennes mers. 4°. Paris. 1884. pp. 6,102, pl. 13.

Larval tubes of phryganids adhering to the leaves of a fossil Nymphæa described, pp. 24–26, and figured, figs. 3–4, by A. F. Marion.

Scheuchzer, J. J. Herbarium diluvianum. f°. Tiguri. 1709. t.p., pp. 44, pl. 10.

Pl. 5, figs. 1–2, p. 16, gives figures and description of an odonate larva from Oeningen and a winged odonate from Monte Bolca.

—— Herbarium diluvianum; editio novissima duplo auctior. f°. Lugduni Batavorum. 1723. 2 t. p., dedic., pp. 119, (5), portr., pl. 14.

The same is found on the same plate, p. 21.

Scrope, George Poulett. The geology and extinct volcanoes of central France. 2d ed. 8°. London. 1858. pp. 17, 258. pl. 17.

Discusses, pp. 10–13, the indusial limestones of France, which he records at the following localities: hills of Gergovia above Romagnat, at the Puys Giron, de Jussat, de la Serre, de Mouton, de Dallet, at Mont Chagny, Mont Jughat, and les Côtes near Clermont; at Davayat near Riom; at Aigueperse, Gannat, Mayet d'école, St. Gerard le Puy, between Jaligny and la Palisse, at Mont Barraud, etc. First edition not seen.

Scudder, S. H. White ants in the American tertiaries. (Harv. univ. bull., 2: 219.) 4°. Cambridge. 1881.

Note on the relation of the six species from Florissant to those of other tertiary deposits; they indicate a warm climate.

—— Notes on some of the tertiary Neuroptera of Florissant, Colo., and Green River, Wyoming Terr. (Proc. Bost. soc. nat. hist., 21: 407–409.) 8°. Boston. 1882.

Summary of general results reached by a study of the American forms.

—— Description of an articulate of doubtful relationship from the tertiary beds of Florissant, Colorado. 4°. [Washington. 1885.] 6 pp., figs. (Mem. nat. acad. sc., 3: 85–90.) 4°. Washington. 1885.

Extended description of Planocephalus, a headless insect presumed to belong to Thysanura, and to form a distinct group therein.

Sismonda, Eugenio. Matériaux pour servir à la paléontologie du terrain tertiaire du Piémont. (Mem. accad. sc. Torino, (2), 22: 391–471, pl. 1–33.) 4°. Torino. 1865.

Sismonda, E.—Continued.

Refers, p. 470, to the occurrence of the larva of Libellula doris in the upper miocene beds of Guarène; it is figured, pl. 17, fig. 6.

Stoehr, Emilio. Notizie preliminari su le piante ed insetti fossili della formazione solfifera in Sicilia. (Bull. com. geol. ital., 1875, 284–287.) 8°. Roma. 1875.

The insects from Girgenti are determined by Dr. von Heyden, p. 286, as larvæ of Libellula doris Heer and L. eurynome Heer, the former in great quantities; both are Oeningen species.

Viquesnel, Auguste. Note sur les environs de Vichy, département de l'Allier. (Bull. soc. géol. France, 14: 145–155.) 8°. Paris. 1842.

Refers on p. 149 to the cases of phryganids.

Wilkinson, C. S. [Fossil insects near Vegetable Creek, New England.] (Proc. Linn. soc. N. S. Wales, 8: 398.) 8°. Sydney. 1883.

Larvæ and pupæ of Ephemeridæ in the tin-bearing tertiary deep leads.

⊙. Termiten im Bernsteinwalde. (Neue preuss. prov.-blätt., (3), 1: 61–64.) 16°. Königsberg. 1858.

A popular account, drawn from Hagen's Monographie der termiten.

VIId.—Cenozoic Orthoptera.

⁂ See also under Section I and Section VI.

Berendt, G. C. Mémoire pour servir à l'histoire des blattes antédiluviennes, traduit de l'allemand par M. Heller. (Ann. soc. ent. France, 5: 539–546, pl. 16.) 8°. Paris. 1836.

Descriptions and figures of the species found in amber

——— See also **Germar,** E. F., und **Berendt,** G. C.

Fritsch, A. Notiz über eine heuschrecke aus der braunkohle von Freudenhain. (Archiv naturw. landesdurchf. Böhmen, bd. 1, sect. 2, p. 276, fig.) 8°. Prag. 1869.

Describes and figures Decticus umbraceus.

Germar, Ernst Friedrich und **Berendt,** Georg Carl. Die im bernstein befindlichen hemipteren und orthopteren der vorwelt. f°. Berlin. 1856. t.p., pp. 2, 40, pl. 4. (Berendt, Bernst. befindl. org. reste vorw., 2^{er} bd., 1^{e} abth.)

Edited, with notes, by Hagen; eight Orthoptera are described and figured, in part by Pictet. See same title in Section VII*e*.

Hagen, H. A. See **Germar,** E. F., und **Berendt,** G. C.

Heller. See **Berendt,** G. C.

James, J. F. See **Zeiller,** R.

Pictet de la Rive, F. J. See **Germar,** E. F., und **Berendt,** G. C.

Scudder, S. H. Brief synopsis of the North American earwigs, with an appendix on the fossil species. (Bull. U. S. geol. geogr. surv. terr., 2: 249–260.) 8°. Washington. 1876.

The Note on the fossil species occurs on pp. 259–260, discusses one species already known from the tertiary beds of Florissant, and describes another from the same locality.

——— Fossil Orthoptera from the Rocky Mountain tertiaries. (Bull. U. S. geol. geogr. surv. terr., 1, ser. 2: 447–449.) 8°. Washington. 1876.

Describes a Labidura and a Homœogamia.

——— Critical and historical notes on Forficulariæ; including descriptions of new generic forms and an alphabetical synonymic list of the described species. (Proc. Bost. soc. nat. hist., 18: 287–332.) 8°. Boston. 1876. (Scudder, Ent. notes, 5: 27–72.) 8°. Boston. 1876.

Includes the fossil forms, of which eight species are enumerated.

Zeiller, R. Sur des traces d'insectes simulant des empreintes végétales. (Bull. soc. géol. France, (3), 12: 676–680, pl. 30.) 8°. Paris. 1884.

Ridges raised in half dried mud by Gryllotalpa resemble Phymatoderma and Brachyphyllum.

TRANSLATION: On the tracks of insects resembling the impressions of plants. (Journ. Cinc. soc. nat. hist., viii: 49–52.) 8°. Cincinnati. 1885.

Translated by J. F. James.

VIIe.—Cenozoic Hemiptera.

⁂ See also under Section I and Section VI.

Berendt, G. C. Bitte, die bei gräbereien bisweilen vorkommenden fossilen zapfen, fossiles holz und bernstein-insekten betreffend. (Preuss. provinz. blätt., 15: 623–625.) 16°. Königsberg. 1836.

Records, p. 625, the occurrence of a Nepa in amber.

——— See also **Germar,** E. F., und **Berendt,** G. C.

Meyer, C. E. H. von. Indusia. (Ersch u. Gruber, Allg. encycl. wissensch. u. künste, sect. 2, th. 18, s. 136.) 4°. Leipzig. 1840.

Description of the caddis-fly cases of Auvergne.

Michelin, H. [Sur] un travail imprimé de M. Hoeminghaus [sic], relatif à une espèce fossile du genre Phrygane. (Ann. soc. ent. France, (2), 3, bull. ent., 30–31.) 8°. Paris. 1845.

Mere mention of Phryganea grandis. See Hoeninghaus, F. W.

Ouchakoff, Nicolas. Notice sur un termes fossile. (Bull. soc. imp. nat. Mosc., 1838, 37–42, pl. 1.) 8°. Moscou. 1838. (Ann. sc. nat., (2), 13: 204–207, pl. 1 B.) 8°. Paris. 1840.

Description and general remarks.

TRANSLATION: Notice of a fossil termes. (Calc. journ. nat. hist., 2: 74–78.) 8°. Calcutta. 1842.

ABSTRACT: Notiz über eines fossilen termiten. (Neues jahrb. mineral., 1839, 122–123.) 8°. Stuttgart. 1839.

Oustalet, E. See **Giard**, A.

Pictet de la Rive, F. J. Résultat de ses recherches sur les insectes fossiles de l'ordre des névroptères contenus dans l'ambre. (Actes soc. helv. sc. nat., 30: 69–70.) 8°. Genève. 1845.

All specifically distinct from existing forms, but with one exception belonging to existing genera.

——— und **Hagen**, Hermann August. Die im bernstein befindlichen neuropteren der vorwelt. f°. Berlin. [1856.] t. p., pp. 41–125, pl. 5–8. (Berendt, Bernst. befindl. org. reste vorw., 2^er^ bd., 1^e^ abth., pars.)

More than seventy species are described in full detail and admirably figured. Under the genera also Hagen gives good accounts of the literature of fossil species and prefaces the whole with general observations on the amber Neuroptera. The work is mostly Hagen's. Some descriptions are by Menge. Description of the larva of a Phasma is also appended, p. 122.

Planchon, Gustave. Étude des tufs de Montpellier au point de vue géologique et paléontologique. 4°. [Montpellier.] 1864.

Not seen; according to Oustalet mention is made of Indusia.

Rouville, Paul de. Géologie des environs de Montpellier. 1855.

Not seen; gives, according to Oustalet, some notice of the remains in the indusial limestone.

Saporta, G. de. Les organismes problématiques des anciennes mers. 4°. Paris. 1884. pp. 6,102, pl. 13.

Larval tubes of phryganids adhering to the leaves of a fossil Nymphæa described, pp. 24–26, and figured, figs. 3–4, by A. F. Marion.

Scheuchzer, J. J. Herbarium diluvianum. f°. Tiguri. 1709. t.p., pp. 44, pl. 10.

Pl. 5, figs. 1–2, p. 16, gives figures and description of an odonate larva from Oeningen and a winged odonate from Monte Bolca.

——— Herbarium diluvianum; editio novissima duplo auctior. f°. Lugduni Batavorum. 1723. 2 t. p., dedic., pp. 119, (5), portr., pl. 14.

The same is found on the same plate, p. 21.

Scrope, George Poulett. The geology and extinct volcanoes of central France. 2d ed. 8°. London. 1858. pp. 17, 258. pl. 17.

Discusses, pp. 10–13, the indusial limestones of France, which he records at the following localities: hills of Gergovia above Romagnat, at the Puys Giron, de Jussat, de la Serre, de Mouton, de Dallet, at Mont Chagny, Mont Jughat, and les Côtes near Clermont; at Davayat near Riom; at Aigueperse, Gannat, Mayet d'école, St. Gerard le Puy, between Jaligny and la Palisse, at Mont Barraud, etc. First edition not seen.

Scudder, S. H. White ants in the American tertiaries. (Harv. univ. bull., 2: 219.) 4°. Cambridge. 1881.

Note on the relation of the six species from Florissant to those of other tertiary deposits; they indicate a warm climate.

——— Notes on some of the tertiary Neuroptera of Florissant, Colo., and Green River, Wyoming Terr. (Proc. Bost. soc. nat. hist., 21: 407–409.) 8°. Boston. 1882.

Summary of general results reached by a study of the American forms.

——— Description of an articulate of doubtful relationship from the tertiary beds of Florissant, Colorado. 4°. [Washington. 1885.] 6 pp., figs. (Mem. nat. acad. sc., 3: 85–90.) 4°. Washington. 1885.

Extended description of Planocephalus, a headless insect presumed to belong to Thysanura, and to form a distinct group therein.

Sismonda, Eugenio. Matériaux pour servir à la paléontologie du terrain tertiaire du Piémont. (Mem. accad. sc. Torino, (2), 22: 391–471, pl. 1–33.) 4°. Torino. 1865.

Sismonda, E.—Continued.

Refers, p. 470, to the occurrence of the larva of Libellula doris in the upper miocene beds of Guarène; it is figured, pl. 17, fig. 6.

Stoehr, Emilio. Notizie preliminari su le piante ed insetti fossili della formazione solfifera in Sicilia. (Bull. com. geol. ital., 1875, 284–287.) 8°. Roma. 1875.

The insects from Girgenti are determined by Dr. von Heyden, p. 286, as larvæ of Libellula doris Heer and L. eurynome Heer, the former in great quantities; both are Oeningen species.

Viquesnel, Auguste. Note sur les environs de Vichy, département de l'Allier. (Bull. soc. géol. France, 14: 145–155.) 8°. Paris. 1842.

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VIId.—Cenozoic Orthoptera.

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Berendt, G. C. Mémoire pour servir à l'histoire des blattes antédiluviennes, traduit de l'allemand par M. Heller. (Ann. soc. ent. France, 5: 539–546, pl. 16.) 8°. Paris. 1836.

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Fritsch, A. Notiz über eine heuschrecke aus der braunkohle von Freudenhain. (Archiv naturw. landesdurchf. Böhmen, bd. 1, sect. 2, p. 276, fig.) 8°. Prag. 1869.

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Germar, Ernst Friedrich und **Berendt**, Georg Carl. Die im bernstein befindlichen hemipteren und orthopteren der vorwelt. f°. Berlin. 1856. t.p., pp. 2, 40, pl. 4. (Berendt, Bernst. befindl. org. reste vorw., 2er bd., 1^{e} abth.)

Edited, with notes, by Hagen; eight Orthoptera are described and figured, in part by Pictet.

See same title in Section VIIe.

Hagen, H. A. See **Germar**, E. F., und **Berendt**, G. C.

Heller. See **Berendt**, G. C.

James, J. F. See **Zeiller**, R.

Pictet de la Rive, F. J. See **Germar**, E. F., und **Berendt**, G. C.

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VIIe.—Cenozoic Hemiptera.

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Records, p. 625, the occurrence of a Nepa in amber.

——— See also **Germar**, E. F., und **Berendt**, G. C.

Buckton, G. B. Monograph of the British Aphides. 4 vol. 8°. London. 1875–1883. Vol. 1, t. p., ded., pp. 3, 193, pl. a–c, 1–38;—vol. 2, t. p., pp. 176, pl. 39–86;—vol. 3, t. p., pp. 2, 142, pl. 87–114;—vol. 4, pp. 9, 228, pl. d-i, 115–134.

Vol. 3, pp. 2–4, treat of the successive appearance of insects in time, with special reference to the aphides. Vol. 4 contains a section, pp. 144–178, entitled: Introductory notes on the antiquity of the Hemiptera, and particularly with regard to the Aphidinæ as represented in the sedimentary rocks and in amber, in which are described, and figured on plates 131-133, the aphides in amber given by Germar and Berendt, those given by Heer from Oeningen and Radoboj, and (from advance sheets) some of those figured by Scudder from Florissant; the descriptions are based in all cases on the figures of the same, and a few names are given for the first time. He also copies a figure by Millière, and some by Brodie.

Fairmaire, Léon. See **Millière, P.**

Germar, E. F., und Berendt, G. C. Die im bernstein befindlichen hemipteren und orthopteren der vorwelt. f°. Berlin. 1856. t. p., pp. 2, 40, pl. 4. (Berendt, Bernst. befindl. org. reste vorw., 2^{er} bd., 1^{e} abth.)

Edited, with notes, by Hagen; sixty Hemiptera are described and figured.
See same title in Section VII*d*.

——— ——— See also **Buckton, G. B.**

Hagen, H. A. See **Germar, E. F., und Berendt, G. C.**

Heer, O. Ueber die rhynchoten der tertiärzeit. 8°. Zürich. 1853. pp. 29. (Mitth. naturf. gesellsch. Zürich, 3: 171–197.) 8°. Zürich. 1853.

General account of the relations of the Rhynchota of Oeningen, Radoboj, and Aix to existing faunas, followed by a list of the species described in the third part of his Tertiary insects. They agree better with the insects of the southern zone than with those of Switzerland, and the Capsini and Riparii characteristic of temperate regions are wholly absent.

——— See also **Buckton, G. B.**

Heyden, C. von. Fossile insekten aus der braunkohle von Sieblos. Nachtrag. (Palæontogr., 8: 15–17, pl. 3, figs. 7–9.) 4°. Cassel. 1859.

Description of two Hemiptera and a beetle.
See same title in Section VII*f*.

Millière, Pierre. Observations relatives à l'empreinte d'un hémiptère fossile [with note by Signoret, V., and Fairmaire, L.]. (Ann. soc. ent. France, (3), 1: 9–11, pl. 3^{II}.) 8°. Paris. 1853.

Millière, P.—Continued.

Under the name of Aphis longicaudus, describes an insect from the "schiste marneux" of Ambérieux, Ain.

——— See also **Buckton, G. B.**

Oustalet, É. Sur quelques espèces fossiles de l'ordre des thysanoptères. (Bull. soc. philom. Paris, (6), 10: 20–27.) 8°. Paris. 1873.

Describes a new genus and three new species of Physopoda from Aix.

——— Sur un hémiptère de la famille des pentatomides. (Bull. soc. philom. Paris, (6), 11: 14–16.) 8°. Paris. 1874 [1877].

Describes Cydnopsis heeri.

Schlechtendal, D. von. Physopoden aus dem braunkohlengebirge von Rott am Siebengebirge. (Zeitschr. ges. naturw., 60: 551–592, pl. 3–5.) 8°. Berlin, 1887.

Describes twelve species, referred to the genera Phlœothrips (1), Thrips (7), and Heliothrips (4).

Scudder, S. H. The tertiary Physopoda of Colorado. 8°. Washington. 1875. pp. 3. (Bull. U. S. geol. geogr. surv. terr., 1, ser. 2: 221–223.) 8°. Washington. 1875.

Describes two genera and three species.

——— Physiognomy of the American tertiary Hemiptera. (Proc. Bost. soc. nat. hist., 24: 562–579.) 8°. Boston. 1890.

Sets forth the proportional number of species in each of the families, and compares them with that of those now living in America and in the European tertiaries. The fauna of the tertiary west shown to bear definite relations to that now existing in the same region, but to have distinct tropical affinities. The total number of species is 266.

——— See also **Buckton, G. B.**

Signoret, Victor. See **Millière, P.**

VIIf.—Cenozoic Coleoptera.

*** See also under Section I and Section VI.

Assmann, A. Palaeontologie. Beiträge zur insekten-fauna der vorwelt.—Einleitung. I. Beitrag. Die fossilen insekten des tertiären (miocenen) thonlagers von Schossnitz bei Kanth in Schlesien. II. Beitrag. Fossile insekten aus der tertiären (oligocenen) braunkohle von Naumburg am Bober. Mit einer tafel

Assmann, A.—Continued. abbildungen. 8°. Breslau. 1869. pp. 1–62, taf. 1. (Zeitschr. f. entom. des vereins f. schles. insektenk., (2), 1.)

The second paper describes two Coleoptera. See same title in Section I and Section VI.

Bally, William Hellier. Notice of plant remains from beds interstratified with the basalt in the county of Antrim. (Quart. journ. geol. soc. Lond., 25: 162, 357–362, pl. 14–15.) 8°. London, 1869.

Two elytra of beetles "of distinct species, resembling those of some of the smaller Carabidæ," are mentioned, pp. 359–360, as occurring in the leaf-bed, and are figured, pl. 14, figs. 14–15; in the explanation of the plate, pp. 361–362, they are compared to Rhynchophora, See also Judd, J. W.

Barrois, Jules. See **Debray,** H.

Barthélemy de la Lapommeraye, A. Carabe d'Agassiz, Carabus agassizi. 8°. pp. 4. Marseille. [1850.]

Extract and notice signed G. M. [Guérin Méneville] under same title. (Rev. mag. zool., (2), 3: 203–204.) 8°. Paris. 1851.

Box. [Title of paper unknown.] (Ann. rep. roy. inst. Cornwall, 26:—) 8°. Truro. 1844.

Not seen. Notices elytra of beetles in a layer of sand with vegetable matter beneath a marsh on Millenbreath beach, Cornwall. Cf. Ussher (Geol. mag., (2), 6: 251.). 8°. London. 1879.

Brodie, P. B. On the occurrence of the remains of insects in the tertiary clays of Dorsetshire. (Quart. journ. geol. soc. Lond., 9, proc., 53–54.) 8°. London. 1853.

Refers to a few Curculionidæ and Buprestidæ found at Corfe, afterwards figured by Westwood.

Brown, John. Insects and seeds in peat at Stanway. (Geologist, 1858, 254.) 8°. London. 1858.

Notes the occurrence of elytra.

Curtis, J. See **Lyell,** C.

Debray, Henri. Tourbières du littoral flamand et du département de la Somme. (Bull. soc. géol. France, (3), 2: 46–49.) 8°. Paris. 1874.

Records the discovery, p. 48, of brilliant elytra of Donacia in peat along the Flemish coast.

——— Communications diverses au sujet des tourbières: castors; ossements de baleines; élytres de donacies; squelette humain des tourbières d'Avelny; crânes; bois. (Ann. soc. géol. nord, 5: 125–135.) 8°. Lille. 1878.

Debray, Henri—Continued.

Under the heading Insectes, refers to the discovery in peat at Ardres of Donacia sericea, determined by J. Barrois, pp. 127–128. Separately issued, without change of pagination but with a title-page. 8°. Lille. 1878.

Debray, L. Étude géologique et archéologique de quelques tourbières du littoral flamand et du département de la Somme. (Mém. soc. sc. agric. arts Lille, (3), 11: 433–487, pl. 13.) 8°. Lille. 1873.

Contains a brief paragraph, p. 451, on the few beetles found.

Desmarest, Eugène. Un morceau de bois fossile . . . qui . . . a présenté des traces qui ont dû être faites par des larves d'insectes. (Ann. soc. ent. France, (2), 3, bull., 26–27.) 8°. Paris. 1845.

Wood bored by larvæ of a longicorn beetle.

Desmoulins, Antoine. Découverte d'élytres fossiles de coléoptères. (Ferr., Bull. sc. nat., 9: 253.) 8°. Paris. 1826.

Note upon a locality in the roche calcaire of Mont St. Catherine, near Rouen, where elytra with metallic colors had been found.

Douglas, John William, *et al.* A species of stylopidæ fossil in amber. (Entom. monthl. mag., 14: 18–19.) 8°. London. 1877.

A notice by the editors of the magazine of Menge's Triæna.

Evans, C. E. Insect remains in the Paludina beds at Peckham (with note concerning them by F. Smith, as recorded in a letter from H. Woodward). (Geologist, 4: 39–40, fig.) 8°. London. 1861.

Figures an elytron and mentions others.

Fisher, Osmond. On the brick-pit at Lexden, near Colchester. (Quart. journ. geol. soc. Lond., 19: 393–400.) 8°. London. 1863.

Under the head of Organic remains, pp. 398–400, a letter is printed from T. V. Wollaston concerning Coleoptera found in the pit, and deductions are drawn concerning the climate of the time in which they lived.

Flach, K. Die käfer der unterpleistocänen ablagerungen bei Hösbach unweit Aschaffenburg. 8°. Würzburg. 1884. (2), 13 pp., 2 pl. (Verhandl. phys.-med. gesellsch. Würzb., n. f., 18: 285–297, pl. 8–9.) 8°. Würzburg. 1884.

Twenty-five species mostly Carabidæ and Chrysomelidæ are described and excellently figured.

Fliche, P. Sur les lignites quaternaires de Jarville près de Nancy.

Fliche, P.—Continued.
(Comptes rendus, 80: 1233-1236.) 4°. Paris. 1875.

Records, p. 1234, seven kinds of beetles, northern species affecting moist localities, p. 1236. The insects were determined by Matthieu of the École forestière.

——— Faune et flore des tourbières de la Champagne. (Comptes rendus, 82: 979-982.) 4°. Paris. 1876.

Notices the occurrence, p. 979, of four species of beetles from Vannes.

Fritsch, A. Uiber [sic] einen fossilen maikäfer (Anomalites fugitivus Fr.) aus dem tertiären süsswasserquarz von Nogent le Rotrou in Frankreich. 8°. Prag. 1884. 3 pp., fig. (Sitzungsb. k. böhm. gesellsch. wiss. Prag, 1884, 163-165.) 8°. Prag. 1884.

Describes and figures a beetle found inclosed in a tertiary quartz pebble.

Früh, J. Kritische beiträge zur kenntniss des torfes. (Jahrb. k. k. geol. reichsanst., 35: 677-726, taf. 12.) 8°. Wien. 1885.

Mentions a Donacia on p. 679.

Gaudin, C. T. See **Heer, O.**

Giard, A. Les coléoptères fossiles d'Auvergne par M. Oustalet; remarques critiques. Bull. scient. dép. Nord, (2), 1: 56-62, 109-118.) 8°. Lille. 1878.

A sharp criticism of Oustalet's memoir on the fossil insects of Auvergne.

See same title in Section VIIc.

Gravenhorst, J. L. K. Monographia coleopterorum micropterorum. 16°. Gottingæ. 1806. pp. 16, 236, (12), tab. 1.

Contains, pp. 235-236, description of a single species of Oxyporus from amber, which in p. (3) of index is given the specific name blumenbachii.

Grote, Augustus Radcliffe. Book notice. [Review of Scudder's contribution to Zittel's Handb. d. palæont.] (Can. ent., 18: 100.) 8°. London. 1886.

Proposes Menges for Triæna preoccupied.

Guérin-Méneville, F. E. See **Barthélemy-Lapommeraye, A.**

Hammerschmidt, Karl Eduard. Neue käfer in bernstein. (Haidinger, Bericht fr. naturw. Wien, 1: 39.) 8°. Wien. 1847.

Mere exhibition of a specimen.

Heer, O. Ueber die vorweltlichen käfer von Oeningen. (Mittheil. naturf. gesellsch. Zürich, 1: 17-18.) 8°. Zürich. 1847.

A brief general statement of the peculiarities of the beetle-fauna of Oeningen.

Heer, O.—Continued.

——— Ueber die fossilen pflanzen von St. Jorge in Madeira. (Neue denkschr. allg. schweiz. gesellsch. gesammt. naturw., 15, art. 2.) 4°. Zürich. 1857. pp. 40, pl. 3.

Laparocerus wollastoni described in a note on p. 14, and figured pl. 2, fig. 34.

——— Les charbons feuilletés de Durnten et d'Utznach; discours de M. le professeur O. Heer traduit par M. Charles-Th. Gaudin. (Arch. sc. phys. nat., (n. p.), 2: 305-339.) 8°. Genève. 1858.

In a note, p. 322, mentions the occurrence of species of Donacia and Hylobius in the Dürnten clays. This appears to be the only publication of the address.

——— Ueber die fossilen calosomen. 4°. [Zürich, 1860.] pp. 10, pl.

Published in the Programm of the Polytechnicum of Zürich. Seven species are described and figured from Locle and Oeningen, preceded by general remarks on fossil and recent Carabidæ.

——— Beiträge zur insektenfauna Oeningens. Coleoptera—geodephagen, hydrocanthariden, gyriniden, brachelytren, clavicornen, lamellicornen und buprestiden. (Natuurk. verhand. holl. maatsch. wetensch. Haarl., (2), 16: 1-90, taf. 1-7.) 4°. Haarlem. 1862.

Describes and figures 110 species, nearly all of them new. In an introduction of five pages some general results of the study of Oeningen Coleoptera are tabulated, the most interesting of which appear to be that the fauna is more European in character than the flora and less rich in American forms, and that many species are related to those which now enjoy a wide distribution.

——— Flora fossilis alaskana. Fossile flora von Alaska. 4°. Stockholm. 1869. pp. 41, pl. 10. (Kongl. svenska vetensk.-akad. handl., 8, iv.) 4°. Stockholm. 1869.

Describes Chrysomelites alaskanus, p. 39, pl. 10.

Forms vol. 2, no. ii, of Heer's Flora fossilis arctica.

——— Nachträge zur miocenen flora Grönlands, enthaltend die von der schwedischen expedition in sommer 1870 gesammelten miocenen pflanzen. 4°. Stockholm. 1874. pp. 29, pl. 5. (Kongl. svenska vetensk.-akad. handl., 13, ii.)

Insekten, p. 25, pl. 5, describes two species of Cistelites.

Forms vol. 3, no. iii, of Heer's Flora fossilis arctica.

——— Notes on fossil plants discovered in Grinnell Land by Captain H. W. Feilden, naturalist of the English north

Heer, O.—Continued. polar expedition. (Quart. journ. geol. soc. Lond., 34: 66–72.) 8°. London. 1878.

Mentions, p. 69, the occurrence of a single elytron of a beetle with the plants.

——— Die miocene flora des Grinnell-Landes gegründet auf die von Cap. H. W. Feilden und Dr. E. Moss in der nähe des Kap Murchison gesammelten fossilen pflanzen. 4°. Zürich. 1878. pp. 38, front., pl. 9.

Describes and figures a single beetle.

Forms vol. 5, no. i, of Heer's Flora fossilis arctica.

——— Primitiæ floræ fossilis sachalinensis. Miocene flora der insel Sachalin. t. p., pp. 61, pl. 15. (Mém. acad. imp. sc. St.-Pétersb., 25, vii.) 4°. St.-Pétersbourg. 1878.

Describes a single beetle.

Forms vol. 5, no. iii, of Heer's Flora fossilis arctica.

——— See also **La Harpe**, P. de.

Henwood, William Jory. Observations on the detrital tin-ore of Cornwall. (Journ. roy. inst. Cornwall, 4: 191–254.) 8°. Truro. 1873.

Refers to the discovery of elytra of beetles in alluvium at Perranwell, Cornwall.

TRANSLATION: Remarques sur le minéral d'étain détritique du Cornwall. Traduction, par extraits, par Zeiller. (Ann. des mines, (7), 6: 114–130.) 8°. Paris. 1874.

The translation omits all references to animal remains.

Heyden, C. von. Fossile insekten aus der braunkohle von Sieblos. Nachtrag. (Palaeontogr., 8: 15–17, pl. 3, figs. 7–9.) 4°. Cassel. 1859.

Description of a beetle and two Hemiptera.

See same title in Section VII*e*.

Heyden, C. und L. von. Käfer und polypen aus der braunkohle des Siebengebirges. (Palaeontogr., 15: 131–159 [Käfer, 131–157], pl. 22–24.) 4°. Cassel. 1866.

With another paper, reprinted under the title: Käfer und polypen aus der braunkohle des Siebengebirges.—Dipteren-larve aus dem tertiärthon von Nieder-Flörsheim in Rhein-Hessen, mit 3 tafel abbildungen. Besonderer abdruck aus den Palaeontographicis, 15. 4°. Cassel. 1866. pp. 1–29, pl. 1–3.

Describes sixty beetles.

See same title in Section VII*g*.

Hinde, George Jennings. The glacial and interglacial strata of Scarboro' Heights, and other localities near Toronto, Ontario. (Can. journ. sc. lit. hist., n. s., 15: 388–413, pl.) 8°. Toronto. 1877.

Mentions, p. 399, elytra of Carabidæ in interglacial clays.

Hislop, S. See **Murray**, A.

Hollingworth, George H. Description of a peat-bed interstratified with the boulder drift at Oldham. (Quart. journ. geol. soc. Lond., 37: 713–714, fig.) 8°. London. 1881.

Reports beetles in the main bed of peat, p. 713.

Hope, F. W. Description de quelques insectes non décrits trouvés dans la résine animée. (Mag. de zool., (2), 4, Ins., pl. 87–89.) 8°. Paris. 1842.

Three coleoptera are described and figured in detail.

Horn, George Henry. Notes on some coleopterous remains from the bone cave at Port Kennedy, Pennsylvania. (Trans. Amer. ent. soc., 5: 241–245.) 8°. Philadelphia. 1876.

Collected, without change of pagination, with other papers under the title: Miscellaneous papers on American coleoptera. Eleven species are described.

Judd, John Wesley. The secondary rocks of Scotland. Second paper. On the ancient volcanoes of the Highlands and the relation of their products to the mesozoic strata. (Quart. journ. geol. soc. Lond., 30: 220–301, pl. 22–23.) 8°. London. 1874.

Mentions, p. 274, the discovery of "elytra of two species of beetles" in lacustrine deposits at Ballypalidy, Co. Antrim, Ireland, which he refers to the miocene. These beetles were figured by Baily (q. v.).

Kendall, J. D. Interglacial deposits of West Cumberland and North Lancashire. (Quart. journ. geol. soc. Lond., 37: 29–39, pl. 3.) 8°. London. 1881.

Records the occurrence of elytra of beetles in deposits at Drigg, p. 34, and St. Bees, p. 35, without mention of names.

Kerr, Washington Carothurs. Report of the geological survey of North Carolina. Vol. i. Physical geography, résumé, economical geology. 1875. 8°. Raleigh. 1875. pp. 18, 325, 120, map, pl. (1), 8.

Reports on p. 167 the occurrence of "numerous shining wing-covers of beetles" in peat near Morganton, N. C.

Kolbe, H. J. Zur kenntniss von insektenbohrgängen in fossilen hölzern (Zeitschr. deutsch. geol. gesellsch., 40: 131–137, pl. 11.) 8°. Berlin. 1888.

Describes borings of four different tertiary beetles, of which three are named, one from Lebanon, the others from Nieder Lausitz. A list of known similar borings is added.

La Harpe, Philippe de. Sur un gisement de tourbe glaciaire trouvé á Lausanne. (Bull. soc. vaud. sc. nat., 14: 456–458.) 8°. Lausanne. 1876.

Contains a letter from Heer, who examined the organic remains in the peat and found the elytra of a Donacia.

Landgrebe, Georg. Ueber einen im polir-schiefer des Habichts-waldes aufgefundenen käfer. (Neues jahrb. f. mineral., 1843: 137–142.) 8°. Stuttgart. 1843.

Describes an Aphodius.

[**Linné**, C. von.] Museum tessinianum, opera illustrissimi comitis, Dom. Car. Gust. Tessin. f°. Holmiae. 1753. pp. (8), 123, (9), pl. 14.

On p. 98 he enters Entomolithus coleoptri, unknown locality, which he likens to a carabid.

Lyell, C. On the boulder formation or drift, and associated fresh-water deposits composing the mud cliffs of eastern Norfolk. (Proc. geol. soc. Lond., 3: 171–179.) 8°. London. 1840.

Mention is made, p. 175, of the discovery of three elytra of Coleoptera, which Curtis determines to be identical with living British species of Donacia and Copris.

Matthieu. See **Fliche**, P.

Menge, A. See **Douglas**, J. W.

Mortillet, Gabriel. Description d'une nouvelle espèce de coléoptère fossile (Donacia genin) trouvé dans les lignites de Sonnaz. (Bull. soc. hist. nat. Savoie, 1850, p. 135.) (Les Alpes, 1850, no. 5.) (Arch. sc. phys. nat., 15: 78–79.) 8°. Genève. 1850.

Description of the species. Only the last reference seen.

Motschulsky, V. Die coleopterologischen verhältnisse und die käfer Russland's. 4°. Moskau, 1845. 131 pp., 1 pl. (Bull. soc. imp. nat. Mosc., 18: 1–131, tab. 1.) 8°. Moskau, 1845.

Contains brief memoranda on amber insects on pp. 98–100.

——— Genres et espèces d'insectes publiés dans différents ouvrages. Supplément au 6e vol. des Horæ societatis entomologicæ rossicæ. 8°. St. Pétersbourg. 1868. t. p., pp. 118.

Contains a list, p. 103, of Insectes contenus dans le succin described by the author.

Murray, Andrew. Notes on some fossil insects from Nágpur. (Quart. journ. geol. soc. Lond., 16: 182–185, 189, pl. 10, figs. 66–70.) 8°. London. 1860.

Occurs as a separate note in an article by Hislop, "On the tertiary deposits associated with the trap-rock in the East Indies, with descriptions of the fossil shells by the Rev. Stephen Hislop, and of the fossil insects by Andrew Murray, and a note on the fossil Cypridæ by T. Rupert Jones." Thirteen Coleoptera (Buprestidæ and Curculionidæ) are mentioned and figured; only one is named.

Nöggerath, J. Notizen über fossile animalien. (Arch. ges. naturl., 2: 323–325.) 8°. Nürnberg. 1824.

Mentions the discovery of fossil beetles (p. 325), at Orsberge on the Rhine.

Oustalet, É. Recherches sur les insectes fossiles des terrains tertiaires de la France; deuxième partie. Insectes fossiles d'Aix en Provence. [Premier fascicule. Coléoptères d'Aix.] (Ann. sc. géol., 5, art. 2, pp. 1–347, pl. 1–6.) 8°. Paris. 1874. [pp. 1–136 and pl. 1–2, Febr. 15, 1874; pp. 137–347, pl. 3–6, May 15, 1874.] *Also* [with prem. partie] *under the title:* Recherches sur les insectes fossiles des terrains tertiaires de la France. Thèse présentée à la faculté des sciences. 8°. Paris. 1874. pp. 1–556, pl. 1–12.

The second part describes 81 species after the same plan as in the preceding memoir. 32 of them are Rhynchophora, 19 Staphylinidæ, 11 Carabidæ, and the rest scattered among various families; the memoir opens with a chapter of 74 pages on the geological relations of the gypsum beds of Aix. For first part, see Section VI.

——— See also **Giard**, A.

Peach, Charles William. An account of the fossil organic remains found on the south-east coast of Cornwall, and in other parts of that county. (Trans. roy. geol. soc. Cornwall, 6: 12–23.) 8°. Penzance. 1846.

Mentions the discovery of elytra of beetles in alluvial matter lying about the roots of trees resting on clay at Port Mellin, p. 23.

——— On the fossiliferous strata of part of the south-east coast of Cornwall. (Trans. roy. geol. soc. Cornwall, 7: 57–62, pl. 3–4.) 8°. Penzance. 1865.

Mentions, p. 62, the occurrence of elytra of beetles in similar situations as the preceding at Ready Money.

Ponzi, Giuseppe. Lavori degli insetti nelle lignite del Monte Vaticano. 4°. Roma. [1876.] pp. (3). (Atti reale accad. lincei, (2), 3: 375–377.) 4°. Roma. 1876.

Treats only of the same insect as the next.

——— I fossili del Monte Vaticano. 4°. Roma. 1876. pp. 37, tav. 3. (Atti r. accad. linc., (2), 3: 925–959, tav. 1–3.) 4°. Roma. 1876.

Under the name of Hylobium tortonianum describes, p. 10 (932), and figures, pl. 1, fig. 9, borings in pine from pliocene deposits.

Robert, Eugène. Lettre sur les observations faites en Danemarck, en Norwége et en Suède, et dans laquelle il parle du succin, etc. (Bull. soc. géol. France, 9: 114–118.) 8°. Paris. 1838.

The letter is addressed to M. Cordier. The amber containing insects is mentioned on pp. 114–115. The insects mentioned are Aphodius fossor, Buprestis, Galeruca, "altises," and "le bouclier." all on p. 114. It is quoted in the Royal society's catalogue under the title: De la disposition de la tourbe à Elseneur et des insectes qu'on y trouve.

S. Fossil coleoptera. (Hardw. sc. gossip, 1867: 238.) 8°. London. 1867.

Describes finding four Coleoptera in a stratum of debituminised peat in a freestone quarry near Fifeness.

Schaufuss, L. W. Einige käfer aus dem baltischen bernsteine. (Berl. entom. zeitschr., 32: 266–270.) 8°. Berlin. 1888.

Describes three genera, each with one species.

Scheuchzer, J. J. Piscium querelæ et vindiciæ expositæ. 4°. Tiguri. 1708. t. p., pp. 36, pl. 5.

Mentions, p. 15, and figures, pl. 2, a "Scarabæus in lapide fissili öningensi" as a relic of the deluge.

Schilling, Peter Samuel. [Ueber den salz-bohrkafer, Ptinus salinus.] (Uebers. arb. veränd. schles. gesellsch. vaterl. kult., 1843: 174–175.) 4°. Breslau. 1844.

Describes beetles obtained from rock-salt in Wieliczka by dissolving the salt.

Scudder, S. H. Fossil Coleoptera from the Rocky Mountain tertiaries. (Bull. U. S. geol. geogr. surv. terr., 2: 77–87.) 8°. Washington. 1876.

Describes thirty species, mostly from Green River, Wyoming, and White River, Colorado.

——— Description of two species of Carabidæ found in the interglacial deposits of Scarboro' Heights, near Toronto, Canada. (Bull. U. S. geol. geogr. surv. terr., 3: 763–764.) 8°. Washington. 1877.

Referred to Loxandrus and Loricera.

Scudder, S. H.—Continued.

——— The operations of a prehistoric beetle. (Can. ent., 18: 194–196.) 8°. London. (Ont.) 1886.

Subcortical mines of a scolytid beetle found on a juniper root in interglacial clays.

——— Administrative report U. S. geological survey for the year 1886–1887. (Ann. rep. U. S. geol. surv., 8: 188–189.) 8°. Washington. 1889.

One hundred and twenty-six species of 63 genera of Carabidæ, Dytiscidæ, Hydrophilidæ, Silphidæ, Staphylinidæ, and Coccinellidæ have been found in the American tertiaries.

——— [Remains of Coleoptera in the interglacial clays of Scarboro', Ont.] (Proc. Bost. soc. nat. hist., 24: 467–468.) 8°. Boston. 1890.

Elytra of 32 species have been discovered, mostly Carabidæ (20 sp.) and Staphylinidæ (7 sp.). All are extinct, but resemble insects of the same region.

——— See also **Grote**, A. R.

Serres, P. M. T. de. Notice sur les cavernes à ossemens fossiles des carrières de calcaire grossier, situées aux environs de Lunel Vieil, dans le département de l'Hérault. (Mém. soc. linn. Paris, 5: 442–464.) 8°. Paris. 1827.

§ V. Insectes, p. 457, gives a very brief account of the remains of Coleoptera found in the cavern

Smith, Edward. On the stream works of Pentowan. (Trans. geol. soc. Lond., 4: 404–409.) 4°. London. 1817.

Records, p. 407, the "wings of coleopterous insects" at a depth of 46 feet from the surface of the ground below layers of peat and sea mud in a section at Pentowan, Cornwall, half a mile from the coast.

Smith, F. See **Evans**, C. E.

Stein, J. P. E. F. Miscellanea. A. Zwei bernstein käfer. (Berl. entom. zeitschr., 25: 221.) 8°. Berlin. 1881.

Describes two species of Bothrideres.

Unger, F. Die fossile flora von Szántó in Ungarn. (Denkschr. kais. akad. wiss. Wien, math.-nat. cl., 30, i: 1–20, pl. 1–5.) 4°. Wien. 1870.

Describes, pp. 3–4, and figures, pl. 1, figs. 13–14, the elytron and wing of a beetle, Melolonthites parschlugiana.

Ussher, W. A. E. Pleistocene geology of Cornwall; part iv. Submerged forests and stream tin gravels. (Geol. mag., (2), 6: 251–263.) 8°. London. 1879.

Refers in several places, on the authority of others, to the discovery of coleopterous remains in pleistocene deposits.

Ussher, W. A. E.—Continued.

——— The post-tertiary geology of Cornwall. 8°. Hertford. 1879. pp. (4), 59, pl. (1). figs.

Refers, pp. 30, 32, to the occurrence of elytra in alluvium and clay at different localities, on the authority of others.

Weber, C. Otto. Der tertiärflora der niederrheinischen braunkohlenformation. (Palæontogr., 2: 115–236, pl. 18–25.) 4°. Cassel. 1851–1852.

Contains, pp. 225–250 (1852), Ueber ein fossiles torflager in der Vorder-Eifel bei dem dorfe Wohlscheid, in which, p. 229, pl. 25, figs. 17–18, a Pterostichus is noted.

Webster, Thomas. On the fresh-water formations in the Isle of Wight, with some observations on the strata over the chalk in the southeast part of England. (Trans. geol. soc. Lond., 2: 161–254.) 4°. London. 1814.

Mentions, pp. 194, 206, branches of trees found in the tertiary clays of Sheppey, bearing excrescences produced by insects; and, p. 230, the discovery of beetles in the tertiary deposits at Newport.

Westwood, J. O. See **Brodie**, P. B.

Wollaston, Thomas Vernon. Note on the remains of Coleoptera from the peat of Lexden brick-pit. (Quart. journ. geol. soc. Lond., 19: 400–401.) 8°. London. 1863.

Indicates brifly the generic affinities of a dozen species.

——— See also **Fisher**, O.

Woodward, H. See **Evans**, C. E.

⁂ The statement is somewhere made that **Debey**, Deutsch. naturf. versamml., 1847: 269–328, or Rheinl. u. westf. verhandl., 1848: 113–425, has a reference to two kinds of Coleoptera at Aix; but neither has.

VIIg.—Cenozoic Diptera.

⁂ See also under Section I and Section VI.

Breyn, J. P. Observatio de succinea gleba, plantæ cujusdam folio imprægnata, rarissima. (Phil. trans., 34, 154–156, pl., fig. 2.) 4°. London. 1728.

Mentions a fly in amber, with minute figure of same. See same title in Section VII*b*.

Brongniart, C. J. E. Observations sur un insecte fossile de la famille des diptères trouvé à Chadrat (Auvergne), (Protomyia oustaleti). (Ann. sc. géol., 7, art. 4, pp. 2.) 8°. Paris. 1876.

Simple description.

Brongniart, C. J. E.—Continued.

——— Note sur une nouvelle espèce de diptère fossile du genre Protomyia (P. oustaleti), trouvée à Chadrat (Auvergne). (Bull. soc. géol. France, (3), 4: 459–460, pl. 13, figs. 5–8.) 8°. Paris. 1876.

Same as the preceding.

——— Note rectificative sur les espèces de bibionides fossiles du genre Plecia. (Bull. séances soc. ent. France, 1878, vi: 60–61.) 8°. Paris. 1878. (Ann. soc. ent. France, (5), 8, bull., 47–48.) 8°. Paris. 1878.

The fossil Diptera described as Protomyia and Bibiopsis belong to the modern genus Plecia.

——— Note rectificative sur quelques diptères tertiaires et en particulier sur un diptère des marnes tertiaires (miocène inférieur) de Chadrat (Auvergne) la Protomyia oustaleti qui devra s'appeler Plecia oustaleti. 8°. Lille. 1878. t. p. pp. 73–81. (Bull. scient. dép. nord, (2), ann. 1, pp. 73–81.) 8°. Lille. 1878.

Discusses in full the species of fossil Bibionidæ described as Protomyiæ and Bibiopsides, and concludes that all belong to Plecia; redescribes Plecia oustaleti; an enlargement of the preceding paper.

——— Note sur les tufs quaternaires de Bernouville près Gisors (Eure). 8°. Paris. 1880. pp. 3. (Bull. soc. géol. France, (3), 8: 418–420.) 8°. Paris. 1880.

Records finding the larva of Stratiomys, p. 2 (419).

——— See also **Giard**, A.

Denton, William. On a mineral, resembling albertite, from Colorado. (Proc. Bost. soc. nat. hist., 10: 305–306.) 8°. Boston. 1866.

The first account, p. 306, of fossil insects from the American tertiaries. He speaks only of Diptera in a petroleum shale.

Giard, A. Note sur un diptère nouveau pour la faune française (Penthetria holosericea Meig.) suivie de quelques remarques sur les bibionides fossiles. (Bull. scient. hist. litt. dép. nord, ann. 8, pp. 172–178.) 8°. Lille. 1876.

Discusses, pp. 177–178, the Penthetria vaillantii of Oustalet from Auvergne. Continued in the following.

——— Note sur les bibionides fossiles. (Bull. scient. dép. nord, (2), 1: 12–16.) 8°. Lille. 1878.

Criticises the classification by Oustalet and Brongniart of various species placed by them in Protomyia. A continuation of the preceding.

——— See also **Oustalet**, E.

Heer, O. See **Loew**, H.

Heyden, C. von und L. von. Bibioniden aus der rheinischen braunkohle von Rott. (Palæontogr., 14: 19–30, pl. 8, 9, figs. 1–12.) 4°. [Cassel.] 1865.

Description of twenty-three species, mostly Protomyia, and remarks on three or four others.

——— Dipteren-larve aus dem tertiärthon von Nieder-Flörsheim in Rhein-Hessen. (Palæontogr., 15: 157, pl. 23, fig. 22.) 4°. Cassel. 1866.

With another paper reprinted under the title: Käfer und polypen aus der braunkohle des Siebengebirges.—Dipteren-larve aus dem tertiärthon von Nieder-Flörsheim in Rhein-Hessen, mit 3 tafel abbildungen. Besonderer abdruck aus den Palæontographicis, 15. 4°. Cassel. 1866. pp. 1-29, pl. 1–3.

Description of Muscidites deperditus.

See same title in Sect. VII *f*.

Heyden, L. von. Fossile dipteren aus der braunkohle von Rott im Siebengebirge. 4°. Cassel. 1870. t. p., pp. 2, 30, pl. 1–2. (Palæontogr., 17: 237–266, pl. 44–45.) 4°. Cassel. 1870.

Describes forty-one species of seventeen genera, besides seven larvæ of two different genera. In an appendix, pp. 265–266, a few details are given of other insects, and the collections in which they are found.

Langius, Carolus Nicolaus. Historia lapidum figuratorum Helvetiae, ejusque viciniae, in quâ non solùm enarrantur omnia eorum genera, species et vires, aeneisque tabulis repraesentantur, sed insuper adducuntur eorum loca nativa, in quibus reperiri solent, ut cuilibet facile sit eos colligere, modo adducta loca adire libeat. 8°. Venetiis. 1708. 2 t. p., pp. (26), 165, tab. 52.

A single "Musca" from Oeningen is figured on pl. 7, fig. 5, and mentioned on p. 39.

Loew, Hermann. Ueber den bernstein und die bernstein fauna. 4°. Berlin. 1850. pp. 44. (Progr. königl. realsch. Meseritz, 1850, pp. 1–44.) 4°. Meseritz. 1850.

Separate Berlin edition not seen; of the other, pp. 28–44 are occupied by a general systematic review of the amber Diptera, of which many new genera and species are indicated with brief or no description. More than 10,000 specimens were examined by Loew, and about 575 species indicated.

——— Beschreibung einiger neuen Tipularia terricola. (Linn. entom., 5: 385–406, tab. 2.) 8°. Berlin. 1851.

Treats, pp. 400–401, pl. 2, figs. 16–23, of the genus Toxorrhina and figures three amber species.

Loew, H.—Continued.

——— Ueber die dipteren fauna des bernsteins. 4°. Königsberg. 1861. pp. 13. (Amtl. ber. versamml. deutsch. naturf., 35: 88–98.) 4°. Königsberg. 1861.

An important discussion of the problems suggested by a study of the Diptera of the Prussian amber, of which at this time 850 species were known to the author, and of which over 650, belonging to 101 genera, had been satisfactorily determined. These insects belong to a single district fauna, and represent only a fragment of that, viz: those low flying Diptera which love moist places sheltered from the wind. The generic types which existed in the amber period have probably been preserved down to our time. Of all living types North American Diptera, especially those found from lat. 32° to 40° most nearly resemble the amber fauna; next to these, those of Europe.

TRANSLATION: On the Diptera or two-winged insects of the amber-fauna. 8°. New Haven. 1864. pp. 20. (Amer. journ. sc., (3), 37: 305–324.) 8°. New Haven. 1864.

Translation by R. von Osten Sacken, who adds a single brief note on living species common to Europe and America.

——— Monographs of the Diptera of North America; prepared for the Smithsonian institution. Part 1; edited, with additions, by R. Osten Sacken. 8°. Washington. 1862. pp. 24, 221, pl. 2.

References to amber Diptera, partly original, will be found on pp. 11, 17.

——— *The same:* Part 2. On the North American Dolichopodidæ. 8°. Washington. 1864. pp. 11, 360, pl. 3–7.

A paragraph in his Supplement, pp. 321–322, points out that this family of American flies "shows the most remarkable analogy to the remains of the fossil fauna of the same family preserved in amber."

——— Berichtigung der generischen bestimmung einiger fossilen dipteren. (Zeitschr. gesamml. naturw., 32: 180–191, taf. 5.) 8°. Berlin. 1868.

A revision of the tertiary Bibionidæ described by Heer.

Meyer, C. E. H. von. Fische und insekten der braunkohle bei Westerburg in Nassau. (Neues jahrb. mineral., 1851: 677.) 8°. Stuttgart. 1851.

Brief notice of the discovery of two flies.

Osten Sacken, Carl (Robert Romanoff) von. New genera and species of North American Tipulidæ with short palpi, with an attempt at a new classification of the

Osten Sacken, C.—Continued. tribe. (Proc. acad. nat. sc. Philad., 1859: 197–256, pl. 3–4.) 8°. Philadelphia. 1859.

Refers, pp. 200, 221, 251, to the relationship of Protoplasa, Elephantomyia and Rhamphidia to the species of the Baltic amber, and the identity of Toxorrhina and Limnobiorhynchus.

——— Appendix to the paper entitled New genera and species of North American Tipulidæ with short palpi, etc. (Proc. acad. nat. sc. Philad., 1860: 15–17.) 8°. Philadelphia. 1860.

Brief remarks on the amber genera Toxorrhina and Macrochile, p. 17.

——— Monographs of the Diptera of North America. Part 4. On the North American Tipulidæ. 8°. Washington. 1869. pp. 11, 345, pl. 4.

Compares the American fauna to that of the European amber fauna, pp. 37–38; devotes a couple of paragraphs, pp. 107–109, 112–114, to show that the amber species referred by Loew to Toxorrhina belong to Elephantomyia; and another to the Eriocerae of Baltic amber, pp. 251–252.

——— Ueber einige merkwürdigen fälle der geographischen verbreitung von Tipuliden. (Entom. nachr., 6: 67–68.) 8°. Putbus. 1880.

Abstract of a paper published in the Tageblatt of the 52er Versammlung deutscher naturforscher, pp. 232–233. Contains a few words about the Tipulidæ of amber as compared with those living in N. America.

——— A relic of the tertiary period in Europe, Elephantomyia, a genus of Tipulidæ. (Mitth. münch. entom. ver., 5: 152–154.) 8°. München. 1881.

Three species are found in amber, one in Europe and America and one in South Africa. Not seen. Noticed in Arch. sc. phys. nat., (3), 7: 503. 8°. Genève. 1882.

——— See also **Loew**, H.

Oustalet, É. Note sur une empreinte de diptère fossile des marnes du gypse des environs de Paris. (Bull. soc. philom. Paris, (6), 9: 161.) 8°. Paris. 1872.

Not seen; title received from the author. Bibio chapuisi is described.

——— Réclamation sur une question de nomenclature. (Bull. séances soc. entom. France, 1878, vii: 72.) 8°. Paris. 1878. (Ann. soc. entom. France, (5), 8, bull., 60–61.) 8°. Paris. 1878. (Bull. scient. dép. du Nord, (2), 1: 105–106.) 8°. Lille. 1878. (With notes by Giard.)

A claim that the name of the original describer of the species of Protomyia referred by Brongniart to Plecia should still remain attached to them. Giard refers to the opinion of Loew regarding Heer's Protomyia.

——— See also **Giard**, A.

Staub, Moriz. Tertiäre pflanzen von Felek bei Klausenburg. 8°. Budapest. 1883. t. p., 19 pp., 1, pl. (Mitth. jahrb. k. ung. geol. anst., 6: 263–281, pl. 18.) 8°. Budapest. 1883.

Describes and figures Bibio kochii.

Unger, F. Fossile insecten. 4°. [Breslau.] 1841. pp. 16, pl. 2. (Acta acad. cæs. leop.-carol., 19, ii: 413–428, tab. 71–72.) 4°. Vratislaviæ et Bonnæ. 1842.

Describes and figures eight Diptera from the tertiary beds of Radoboj. A geological section is given on the first plate, and the larger part of the paper, pp. 415–424, is given to an account of the locality.

Williston, Samuel Wendell. Some interesting new Diptera. (Trans. Conn. acad. arts sc., 4: 243–246, fig.) 8°. New Haven. 1880.

In describing a new nemestrid from Washington Territory, he discusses the fossil Palembolus of Florissant.

——— Synopsis of the North American Syrphidæ. 8°. Washington. 1886. pp. 30, 335, pl. 12. (Bull. U. S. nat. mus., 31.)

Contains, pp. 281–283, a section on Geological distribution, mostly a review of Florissant Syrphidæ.

VIIh.—Cenozoic Lepidoptera.

*** See also under Section I and Section VI.

Boisduval, Jean Alphonse. Compte verbal du rapport . . . sur un dessin . . . qui représente une empreinte de lépidoptère fossile, trouvée dans les environs d'Aix. (Ann. soc. ent. France, 8, bull. ent., 11–12.) 8°. Paris. 1839.

Compares the butterfly to the modern genus Cyllo. Reproduced in Scudder's Fossil butterflies, p. 15.

——— Rapport sur une empreinte de lépidoptère trouvée dans les marnes des environs d'Aix en Provence, et communiquée par M. de Saporta. (Ann. soc. ent. France, 9: 371–374, pl. 8.) 8°. Paris. 1840.

Description of Cyllo sepulta. Reproduced in Scudder's Fossil butterflies, pp. 15–17.

——— Quelques mots de réponse à M. Alex. Lefebvre sur les observations rela-

Boisduval, J. A.—Continued.
tives à la Cyllo sepulta, et à laquelle il donne pour épigraphe ces mots: Stupete gentes! (Ann. soc. ent. France, (2), 9, bull. ent., 96–98.) 8°. Paris. 1851.

Rejoinder maintaining his own position and ridiculing that of Lefebvre. Reproduced in Scudder's Fossil butterflies, p. 26.

Brodie, P. B. Fossil Lepidoptera. (Ann. rep. proc. Warw. nat. arch. field club, 1877, pp. 3–9.) 8°. Warwick. 1877.

Not seen. The author states that it is based on Scudder's work on the subject, and contains nothing original.

Butler, A. G. Catalogue of the diurnal lepidoptera of the family Satyridæ in the collection of the British museum. 8°. London. 1868. pp. 6, 211, pl. 5.

Under the heading Fossil species, pp. 189–190, are given brief notes on Neorinopis sepulta, to show that it "is exactly intermediate in character between . . . Neorina, Antirrhœa, and Anchyphlebia."

——— Catalogue of diurnal Lepidoptera described by Fabricius in the collection of the British museum. 8°. London. 1869. pp. 5, 303, pl. 3.

Refers, p. 109, to a possible relationship between Argynnis diana and the fossil Vanessa pluto.

——— Description of a new genus of fossil moths belonging to the geometrid family Euschemidæ. (Proc. zool. soc. Lond., 1889: 292–297, pl. 31.) 8°. London. 1889.

Describes Lithopsyche antiqua from the Isle of Wight tertiaries, figures it and related living forms, and discusses the development of color in Lepidoptera.

Daudet, Henri. Chenilles fossiles. (Petites nouv. entom., 2, no. 145, p. 25.) 4°. Paris. 1876.

First mention of the discovery of caterpillars at Aix.

——— Description d'une chenille fossile trouvée dans le calcaire d'Aix (Provence). (Rev. mag. zool., (3), 4: 415–424, pl. 17.) 8°. Paris. 1876.

Describes and figures Satyrites incertus, the first fossil caterpillar of a butterfly known, and discusses its probable affinities.

Doubleday, Edward, and **Westwood**, John Obadiah. The genera of diurnal Lepidoptera; comprising their generic characters, a notice of their habits and transformations, and a catalogue of the species of each genus; illustrated with 86 plates, by William C. Hewitson. 2 vols. fol. London. 1846–'52. Vol. 1, pp. 12, 250, (2), pl. A, 1–30;—vol. 2, t.p., pp. 251–534, pl. 31–80, and suppl. pl.

Several numbers on the plates are repeated, followed by "A." A single fossil species, Cyllo sepulta, is catalogued on p. 361.

Duponchel [Philogène Auguste Joseph]. L'existence d'une impression très-remarquable de lépidoptère fossile, qui a été trouvée dans une plâtrière des environs d'Aix (en Provence). (Ann. soc. ent. France, 7, bull. ent., 51–52.) 8°. Paris. 1838.

First announcement of Neorinopis as a "Nymphale." Reproduced in Scudder's Fossil butterflies, p. 15.

Edwards, William Henry. The butterflies of North America. 4°. New York. 1868–'72. pp. (10), 2, (154), pl. (50). Contains also a synopsis of North American butterflies, pp. 5, 52, and a supplementary part, pp. (17), pl. (3), and corrected pp. 4–12, 19–20 of synopsis.

P. (64) in pt. 1 (1868) contains a figure of Mylothrites pluto, with suggestions concerning its affinities with the living Argynnis diana.

[**Gervais**, P.] Fossiles du Quercy. (Journ. de zool., 6: 67–68.) 8°. Paris. 1877.

Records a pupa of Triphæna from tertiary deposits.

Goss, H. Fossil Lepidoptera. (Entom., 21: 66–67.) 8°. London. 1888.

A paragraph giving a general account of the known fossil butterflies.

Kawall, J. H. Organische einschlüsse im bergkrystall. (Bull. soc. imp. nat. Moscou, 1876, no. 3, pp. 170–173.) 8°. Moscou. 1876.

Describes a caterpillar, Tineites crystalli, found in quartz from Siberia.

Kirby, W. F. A synonymic catalogue of diurnal Lepidoptera. 8°. London. 1871. pp. 7, 690. Supplement, March, 1871–June, 1877. 8°. London. 1877. pp. 7, 691–883.

Includes the few fossil species.

Lefebvre, Alexandre. Observations relatives à l'empreinte d'un lépidoptère fossile (Cyllo sepulta) du Docteur Boisduval. (Ann. soc. ent. France, (2), 9: 71–88, pl. 3, ii.)

An argument to show that Boisduval had wrongly interpreted both the neuration and the markings of the wings. Reproduced in Scudder's Fossil butterflies, pp. 17–25, pl. 1, figs. 14–16.

Minot, Charles Sedgwick. Zur kenntniss der insektenhaut. (Arch. mikr. anat., 28: 37–48, pl. 7.) 8°. Bonn. 1886.

Describes on pp. 46–47 the structure of the integument of a fossil caterpillar from the oligocene of Florissant.

Scudder, S. H. Description d'un nouveau papillon fossile (Satyrites reynesii) trouvé à Aix en Provence. 8°. Paris. 1872. pp. 7, pl. 1. (Rev. mag. zool., 1871–72: 66–72, pl. 7.)

EXTRACT: Description of a new fossil butterfly (Satyrites reynesii) found at Aix in Provence. 8°. London. 1872. pp. 2, pl. 1. (Geol. mag., 9: 532–533, pl. 13, figs. 2, 3.)

Also entitled on cover: On a new fossil butterfly. The English translation is by the editor of the Geological magazine. The species is from the tertiary.

——— Fossil butterflies. (Mem. Amer. assoc. adv. sc., 1.) 4°. Salem. 1875. pp. 12, 99, pl. 3.

Describes in detail the generic and specific characters of the five known species, besides four new ones, all from European tertiaries. After an historical introduction there are sections on their geological relations, the probable food plants of their caterpillars, the present distribution of their nearest allies, and the fossils believed to be erroneously referred to butterflies. More or less extended abstracts will be found in Arch. sc. phys. nat., n. s., 55: 102–103; 57: 91–92. 8°. Genève. 1876;—Neues jahrb. miner., 1877: 445–447. 8°. Stuttgart. 1877;—Amer. journ. sc., (3), 11: 74–75. 8°. N. Haven. 1876;—Amer. nat., 10: 53, 106–107. 8°. Salem. 1876. See also **Boisduval, J. A.**; **Duponchel, P. A. J.**; and **Lefebvre, A.**

——— Fossil butterflies. (Scudd., Butt. New Engl., 1: 756–760, pl. 16, fig. 6.) 8°. Cambridge, 1889.

Forms Excursus xxiv. A general account of the relations of the few species known in Europe and America.

——— The fossil butterflies of Florissant. (Ann. rep. U. S. geol. surv., 8: 433–474, pl. 52, 53.) 8°. Washington. 1889 [1890].

Descriptions and illustrations of seven species, with an appendix on a living African libytheid allied to one of them; each is referred to a distinct and extinct genus and all but one are Nymphalidæ.

——— See also **Brodie, P. B.**; **Lefebvre, A.**; and **Strecker, H.**

Serres, P. M. T. de. Deuxième note additionelle au Mémoire géologique . . . sur la Provence. (Actes soc. linn. Bord., 13: 170–172.) 8°. Bordeaux. 1843.

Page 172 contains a Note relative au lépidoptère figuré au no. 4; but the plate of the butterfly, Neorinopis sepulta, appears to have been published in a limited edition only, as the two or three copies I have examined do not contain it. Two years later Serres mentions its publication.

——— Sur les fossiles du bassin d'Aix (Bouches du Rhône). (Ann. sc. nat., (3), zool., 4: 249–256). 8°. Paris. 1845.

Pp. 251–254 are mostly given to combating the arguments drawn from the presence of Cyllo sepulta in favor of the equatorial nature of the ancient climate of Aix.

Strecker, Herman. Butterflies and moths in their connection with agriculture and horticulture; a paper prepared for the Pennsylvania fruit growers' society, January, 1879. 8°. Harrisburg. 1879. 22 pp.

Contains, p. 19, a paragraph on fossil butterflies drawn from Scudder's paper, with one or two comments.

Swinton, A. H. A study of the variation of the small tortoise-shell butterfly (Vanessa urticæ). (Hardw. science gossip, 1881: 147–149, 176–179, figs. 88, 104, 105.) l. 8°. London. 1881.

A study of the evolution and specialization of butterflies and moths, showing how the markings of the wings of fossil Lepidoptera harmonize with the systematic design found in recent species; in figs. 104, 105, on p. 177, he attempts restorations of Neorinopis sepulta and a tertiary Bombyx, both from Aix.

Westwood, J. O. See **Doubleday E.**, and **Westwood, J. O.**

VIII.—Cenozoic Hymenoptera.

*** See also under Section I and Section VI.

Andrae, K. J. Beiträge zur kenntnisse der fossilen flora Siebenbürgens und des Banates. Mit zwölf tafeln. pp. 1–48, pl. 1–12. (Abhandl. k. k. geol. reichsanst. Wien, bd. 2, abth. 3, no. 4.) 4°. Wien. 1855.

Figures a Formica, pl. 4, fig. 6, 6a, 8b, with mention on p. 26. The Formica is said to come from Thalheim, but the locality of the plant on the same slab with it is given as Sotzka!

See same title in Section VII*c*.

Brischke, D. Die hymenopteren des bernsteins. 8°. Danzig. 1886. pp. 2.

Brischke, D.—Continued. (Schrift. naturf. gesellsch. Danz., n. f., 6, iii: 278–279.) 8°. Danzig. 1886.

Brief summary of the genera known, based in part on Menge's collection, with the number of specimens in each.

Duisburg, H. von. Zur bernsteinfauna. (Schriften k. phys.-ökon. gesellsch. Königsb., 9: 23–28, fig.) 4°. Königsberg. 1868.

Discusses the systematic position of the smallest amber insect known, a species of the hymenopterous genus Myrmar, the expanse of whose wings is scarcely more than half a millimeter.

Emery, C., et **Forel**, Auguste. Catalogue des formicides d'Europe. (Mitth. schweiz. entom. gesellsch., 5: 441–481.) 8°. Schaffhausen. 1879.

Contains, p. 481, Liste des ouvrages traitant des formicides fossiles (6 titles).

Faujas-de-Saint-Fond, Barthélemy. Nouvelle notice sur les plantes fossiles renfermées dans un schiste marneux des environs de Chaumerac et de Roche Sauve, département de l'Ardèche. (Mém. mus. hist. nat., 2: 444–459, pl. 15.) 4°. Paris. 1815.

Gives the opinion of Latreille on a species of "Polistes" figured on the plate.

Forel, Auguste. See **Emery**, C., et **Forel**, Auguste.

Haesbert, Martin Johann. De conchylio et ape petrifactis. (Ephem. med. phys. acad. cæs. leop. nat. curios., dec. 3, ann. 2, pp. 48–49.) 4°. Leipzig. 1695.

Reports a fossil bee in the collection of Scheidius, figured tab. 2, fig. 4.

Heer, O. Ueber fossile ameisen. (Mittheil. naturf. gesellsch. Zürich, 1: 167–174.) 8°. Zürich. 1848.

The fossil ants of Oeningen and Radoboj are winged and either males or females, neuters being rarely preserved; three fourths are females. The individuals are very abundant, and are preserved in large assemblages, and many species in close contiguity. Most of them are Formicidæ, and they form the best data for comparison of the Oeningen and Radoboj faunas.

TRANSLATION: On fossil ants. (Quart. journ. geol. soc. Lond., 6, ii: 61–65.) 8°. London. 1850.

Translated by T. R. J[ones].

——— Fossile hymenopteren aus Oeningen und Radoboj. 4°. [n. p. n. d.] pp. 42, pl. 3. (Neue denkschr. allgem. schweiz. gesellsch. gesammt. naturw., 22.) 4°. Zürich. 1867.

Heer, O.—Continued.

Catalogues and describes sixty-nine species. In an appendix, p. 42, notice is taken of Mayr's criticism of his former treatment of the fossil ants.

——— See also **Mayr**, G. L.

Latreille, Pierre André. See **Faujas-de-Saint-Fond**, B.

Malfatti, G. Due piccoli imenotteri fossili dell' ambra siciliana. 4°. [Roma. 1881.] pp. 4, figs. (Atti accad. linc., (3), trans., 5: 80–83, 2 figs.) 4°. Roma. 1881.

Describes and figures a Myrmar and a Tapinoma.

Martialis, Marcus Valerius. Epigrammata. Liber 4, section 32.

Et latet et lucet Phaethontide condita gutta,
  Ut videatur apis nectare clausa suo.
Dignum tantorum pretium tulit illa laborum;
  Credibile est ipsam sic voluisse mori.

Some writers have thought that Martial here referred to amber-inclusa.

Mayr, Gustav Leopold. Vorläufige studien über die Radoboj-formiciden in der sammlung der k. k. geologischen reichsanstalt. 8°. Wien. 1867. pp. 16, pl. 1. (Jahrb. geol. reichsanst., 17: 47–61, taf. 1.) 8°. Wien, 1867.

A revision of the specimens described by Heer with reference to modern genera. See also Heer, O.

ABSTRACT: On fossil insects. (Quart. journ. geol. soc. Lond., 23, ii: 7.) 8°. London. 1867.

——— Die ameisen des baltischen bernsteins; mit 106 figuren auf fünf tafeln. (Beitr. naturk. Preussens, 1) pp. 4, 102, (10), tab. 5. 4°. Königsberg. 1868.

Extended descriptions of forty-nine species and twenty-three genera, with some preliminary general observations, including a review of previous literature, and a comparison of amber species with modern types and those of Radoboj.

Saussure, Henri de. Note sur un nouvel insecte hyménoptère fossile. 8°. [Paris. 1852.] pp. 2, pl. (Rev. mag. zool., (2), 4: 579–582, pl. 23, figs. 5–6.) 8°. Paris. 1852.

Describes and figures Pimpla antiqua from tertiaries of Aix.

Scudder, S. H. Note on fossil ants from South Park, Colorado. (Amer. nat., 11: 191.) 8°. Salem. 1877.

About forty species had been found at Florissant.

VIII.—COPAL INSECTS.

⁂ See also under Section I and Section VI.

Bloch, Mark Eliez. Beytrag zur naturgeschichte des kopals. 16°. Berlin. 1776. (Beschäft. berl. gesellsch. naturf. fr., 2: 91–196, tab. 3–5.)

Contains, pp. 164–190, Verzeichniss einiger merkwürdigen insekten, welche in kopal eingeschlossen, with rude figures.

Dalman, Johann Wilhelm. Om insekter inneslutne i copal; jemte beskrifning på några deribland förekommande nya slägten och arter. 8°. Stockholm. 1826. (Kongl. vetensk.-akad. handl., 1825, 375–411, tab. 5.) 8°. Stockholm. 1826.

Describes several new genera and species of insects found in African gum copal. Separate copy not seen. See also Lucas, H.

Abstract: Des insectes renfermés dans les résines de copal. (Ferr., Bull. sc. nat., 14: 287–290.) 8°. Paris. 1828.

A very full abstract including descriptions of the species, signed D. (Desmarest?).

Abstract: On insects enclosed in copal. (Quart. journ. sc. lit. arts, 1828, 227–228.) 8°. London. 1828.

Briefer abstract of same.

Desmarest, A. G. See Dalman, J. W.

Gistl, Johannes Nepomuk Franz Xaver. Kerfe in copal eingeschlossen. (Oken, Isis, 1831, 247–248.) 4°. Leipzig. 1831.

Describes four new species from Brazil. Noticed in Neues jahrb. mineral., 1833, 712. 8°. Stuttgart. 1833.

Hagen, H. A. Synopsis of the Psocina without ocelli. (Entom. monthl. mag., 2: 121–124.) 8°. London. 1865.

Atropos resinata from copal is described on p. 121.

——— On some aberrant genera of Psocina. (Ent. monthl. mag., 2: 148–152, 170–172.) 8°. London. 1865–'66.

Describes three species from copal.
See same title in Section VIIc.

——— Psocinorum et embidinorum synopsis. 8°. Wien. 1866. pp. 22. (Verh. zool.-bot. gesellsch. Wien, 1866, 201–222.) 8°. Wien. 1866.

Includes three Psocina from copal.
See same title in Section VIIc.

Loew, H. Dipterologische beiträge [1. abtheilung]. (Öffentl. prüf. Friedr.-Wilh. gymn. Posen, 1845: 1–52, pl.) 4°. Posen. 1845.

Contains descriptions and figures of three copal Diptera.

Lucas, Hippolyte. [Note sur les espèces de coléoptères décrites par Dalman dans son mémoire: Om insekter inneslutne i copal.] (Bull. séances soc. entom. France, 1878, vii: 75.) 8°. Paris. 1878.

Remarks on the omission of these insects from Gemminger and Harold's Catalogus coleopterorum, and cites the species of all orders figured by Dalman.

Quedenfeldt, G. Copal-insecten aus Africa. (Berl. entom. zeitschr., 29: 363–365.) 8°. Berlin. 1885.

Describes three Coleoptera.

Raffray, Achille. Note sur des insectes renfermés dans des morceaux de gomme copal. (Ann. soc. ent. France, (5), 5, bull. ent., 125–126.) 8°. Paris. 1875.

General notes based on a collection exhibited. A single paragraph is devoted to insects.

Swagerman, Everard Pieter. Waarneeming omtrent de insekten, welken in de gomlak gevonden worden. (Verhand. zeeuwsch. genootsch. wetensch. Vliss., 7, ii: 227–258, pl.) 8°. Middelburg. 1780.

On copal insects.

Westwood, J. O. Characters of Embia, a genus of insects allied to the white ants (Termites); with descriptions of the species of which it is composed. (Trans. linn. soc. Lond., 17: 369–374, pl. 11.) 4°. London. 1837.

In a postscript on p. 374 two species from gum copal are noticed.

——— On the economy of the genus Palmon of Dalman with descriptions of several species belonging thereto. (Trans. entom. soc. Lond., 4: 256–281, pl. 10 pars.) 8°. London. 1847.

Redescribes some of Dalman's copal insects. The living species, whose economy is known, are parasitic on eggs of Mantidæ.

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TO THE DIRECTOR OF THE
UNITED STATES GEOLOGICAL SURVEY,
WASHINGTON, D. C.

WASHINGTON, D. C., *November*, 1890.

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J. W. POWELL, DIRECTOR

REPORT

ON

ASTRONOMICAL WORK

OF

1889 AND 1890

BY

ROBERT SIMPSON WOODWARD

WASHINGTON
GOVERNMENT PRINTING OFFICE
1890

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LETTER OF TRANSMITTAL.

DEPARTMENT OF THE INTERIOR,
U. S. GEOLOGICAL SURVEY,
Washington, D. C., June 30, 1890.

SIR: I have the honor to submit herewith a report on certain astronomical positions determined in 1889 and 1890.

I desire in this connection to acknowledge my indebtedness to Prof. H. S. Pritchett, who made the observations at the base station, St. Louis, in the longitude work; to Messrs. H. L. Baldwin, jr., W. T. Griswold, R. U. Goode, and A. P. Davis, who assisted me in the field work; to Mr. S. S. Gannett, for assistance in the office computations; and to Mr. B. C. Washington, jr., for assistance in office computations and in the preparation of this report. The Survey is indebted to Prof. W. von Streeruwitz and his assistants, of the Texas Geological Survey, and to the officials of the Missouri River Commission for much valuable assistance, concerning which mention is made in the text. I desire also to acknowledge the uniform courtesy of the officials of the Western Union Telegraph Company, who granted the free use of their lines in exchanging clock signals.

Very respectfully,

R. S. WOODWARD,
Chief Geographer.

Hon. J. W. POWELL,
Director U. S. Geological Survey.

REPORT ON ASTRONOMICAL WORK OF 1889 AND 1890.

BY R. S. WOODWARD.

ASTRONOMICAL POSITIONS DETERMINED.

(1) The astronomical positions which form the subject of the following report were determined in connection with the geographical work of the Geological Survey during the autumn of 1889 and the spring of 1890. The points determined are the following, the designations being those of the towns in or near which the astronomical observations were made: Spearville, Kansas; Boisé City, Idaho; and Cisco and Sierra Blanca, Texas.

The longitudes were all determined by the telegraphic method with reference to the observatory of Washington University, St. Louis, Missouri. The observations at this point were made by Prof. H. S. Pritchett, director of the observatory. The observations in the field were made chiefly by the writer. He was assisted at Spearville, Kansas, by Mr. H. L. Baldwin, jr., who observed one night for latitude; at Boisé City, Idaho, by Mr. W. T. Griswold; at Cisco, Texas, by Mr. R. U. Goode, who observed one night for latitude; and at Sierra Blanca, Texas, by Mr. A. P. Davis.

In connection with the astronomical work at Sierra Blanca, two points on the one hundred and fifth meridian were established in El Paso County, Texas. The intersection of this meridian with the Rio Grande River defines the common corner of El Paso, Jeff Davis, and Presidio Counties, and hence the location of this meridian on the ground is a matter of importance to those counties and to the State of Texas. The meridian being about twenty-one miles east of the astronomical station at Sierra Blanca, it was necessary to resort to geodetic operations in order to locate near the meridian a point from which the precise position of the meridian could be measured off on the ground. The details of these operations were designed and executed chiefly by Mr. A. P. Davis.

DESCRIPTION OF STATIONS.

(2) At each of the points named above a suitable pier was erected to support the meridian transit used in making the astronomical observations. All the piers are of one pattern. They consist of a foundation of one cubic yard of concrete well set in hydraulic cement. Centrally on the surface of the foundation, which rises to the level of the ground surface, a solid column of brick-work two by two and one-half brick-lengths in cross-section rises to a height of about three feet. This column is capped by a dressed stone 6 by 19 by 24 inches.

At Spearville, Kansas, the pier is about 150 feet south of the Atchison, Topeka and Santa Fé Railway, and about 1,000 feet east of the railway station. It is the east end of a secondary base measured by Mr. H. L. Baldwin, jr., in 1889.

At Boisé City, Idaho, the pier is on the plain south of the city, about 1,000 feet southwest of the terminus (in 1889) of the Boisé branch of the Union Pacific Railway. It is near the road leading from this terminus across the irrigation ditch; it is south of and within 300 feet of the bridge across this ditch.

At Cisco, Texas, the pier is located on a hill near the intersection of Fourth street and Avenue F. It is 58.1 feet north and 16.2 feet west of a well-hole cased with iron tubing to a depth of 1,500 feet.

At Sierra Blanca, Texas, the pier is on the south side of and about 200 feet from the Southern Pacific Railway.

In all cases these piers are conspicuous objects and in localities where they are unlikely to be disturbed for a long time.

INSTRUMENTS AND INSTRUMENTAL CONSTANTS.

(3) The instruments used at St. Louis were a meridian transit by Fauth & Co., a chronograph by Bond & Sons, and a break-circuit sidereal clock, No. 214, by Howard. The constants of the transit instrument as used in 1889 are the same as those of 1884–'85, and published in Bulletin No. 49 of U. S. Geological Survey. During the winter of 1889–'90 the agate V's of this transit were replaced by brass V's, both of which were made immovable, and the pivots were at the same time repolished. These changes made the instrument somewhat more stable in azimuth and in inclination than it had been during the autumn of 1889. The inequality of pivots was also reduced to an inappreciable quantity.

The instruments used in the field were meridian transit No. 20 by Würdemann, a chronograph by Fauth & Co., and a break-circuit sidereal chronometer, No. 187, by Bond & Sons. The principal constants of this transit are given in Bulletin No. 49 of U. S. Geological Survey. Since the constants given in that publication were determined, however, the pivots have been turned again, a new glass diaphragm has been supplied, and additional data for the value of the zenith distance micrometer screw have been obtained. The new values for the constants used in the work to which this report relates are the following:

Equatorial intervals of diaphragm lines from mean of middle five lines.

Wire		
A_1	$+24^s.22$	Clamp west.
A_2	$+20\ .22$	
A_3	$+16\ .08$	
1	$+\ 8\ .07$	
2	$+\ 4\ .03$	
3	$+\ 0\ .05$	
4	$-\ 4\ .02$	
5	$-\ 8\ .12$	
B_1	$-16\ .09$	
B_2	$-20\ .13$	
B_3	$-24\ .17$	

Inequality of pivots = $+\ 0^s.096$ for clamp west.

Value half revolution of micrometer screw = 40″ 356.

The value of a half revolution of the micrometer screw determined in 1884 from transits of Polaris near its elongation, is 40″.381.[1] The value given above is a mean of this value (40″.381) and a value (40″.331) determined from a large number of observations made by Mr. B. C. Washington, jr., and Mr. S. S. Gannett on a graduated staff placed at a known distance from the transit.

LATITUDES.

(4) The latitudes of the piers were determined by Talcott's method. At each station a meridian mark, whose azimuth was accurately determined by the time observations, was used to keep the error of collimation small, and the line of collimation close to the meridian.

Pairs of stars were selected from Prof. Safford's catalogue of 2,018 stars.[2] In computing the apparent places of these stars, corrections for secular variation of precession were applied.

The computations for the latitudes of Spearville, Kansas; Boisé City, Idaho; and Cisco, Texas, were made chiefly by Mr. S. S. Gannett; those for the latitude of Sierra Blanca, Texas, were made chiefly by Mr. B. C. Washington, jr.

The details of the latitude work are given in Table I following, and the individual results, weights, etc., are given in Table II. The weights applied are the same as those given on page 32 of Bulletin No. 49 of U. S. Geological Survey.

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[1] Bulletin No. 49, U. S. Geological Survey, p. 12.

[2] Mean declinations of 2,018 stars between 0^h and 2^h and 12^h and 24^h right ascension, and 10° and 70° north declination, for January 1, 1875. Prepared under the direction of Lieut. George M. Wheeler, Corps Engineers, U. S. Army. Washington, Government Printing Office, 1879.

TABLE I.—*Details of latitude work: Station, Spearville.*

Date.	Star number.		δ_1	δ_2	$\frac{1}{2}(\delta_1+\delta_2)$	$\frac{1}{2}(Z_1-Z_2)$		Correction for refraction.	ϕ
						Micrometer.	Level.		
1889.			° ′ ″	° ′ ″	° ′ ″	′ ″	″	″	° ′ ″
Oct. 25	1261	1274	45 43 37.06	29 45 47.72	37 44 42.39	+ 6 21.45	+ 0.47	+0.10	37 51 04.41
25	1287	1313	38 56 10.80	36 38 28.51	47 19.65	+ 3 43.45	+ 4.67	+0.06	07.83
25	1320	1326	23 09 30.21	52 28 36.56	49 03.39	+ 2 00.58	+ 1.52	+0.03	05.52
25	1359	1372	50 41 25.44	25 04 41.22	53 03.33	− 1 56.59	+ 0.10	−0.05	06.79
24	1424	1438	28 25 52.43	47 23 52.41	54 52.42	− 3 40.02	− 4.20	−0.06	08.14
25	......	......	52.53	52.56	54 52.54	− 3 45.63	+ 2.94	−0.06	09.79
24	1448	1475	34 03 50.17	41 31 31.54	47 40.85	+ 3 22.51	+ 3.88	+0.06	07.30
25	1450	1464	56 17 41.38	19 24 50.11	51 15.75	− 0 13.48	+ 1.57	0.00	03.84
25	1500	1502	19 39 49.86	56 03 27.31	51 38.58	− 0 37.21	+ 2.41	−0.01	03.77
23	1535	1539	29 52 33.11	45 38 17.60	45 25.35	+ 5 35.40	+ 5.56	+0.10	06.41
25	......	......	33.22	17.78	45 25.50	+ 5 39.23	+ 3.15	+0.10	07.98
24	1558	1559	39 47 29.46	35 45 55.71	46 42.58	+ 4 25.71	− 1.10	+0.08	07.27
25	......	......	29.61	55.84	46 42.72	+ 4 14.77	+10.29	+0.08	07.86
26	......	......	29.78	56.02	46 42.90	+ 4 20.82	+ 3.99	+0.08	07.79
25	1579	1598	49 27 19.90	26 15 13.48	51 16.69	− 0 12.79	+ 2.41	0.00	06.31
26	......	......	20.12	13.60	51 16.86	− 0 09.73	− 0.79	0.00	06.34
24	1608	1619	52 37 17.30	23 08 18.54	52 47.92	− 1 43.27	+ 4.09	−0.03	08.71
25	......	......	17.51	18.63	52 48.07	− 1 46.30	+ 5.09	−0.03	06.83
26	......	......	17.76	18.75	52 48.25	− 1 43.70	+ 1.30	−0.03	05.83
24	1645	1658	57 56 37.02	17 47 27.35	52 02.19	− 0 56.94	+ 0.16	−0.02	05.39
25	......	......	37.26	27.43	52 02.35	− 0 58.11	+ 0.89	−0.02	05.11
26	......	......	37.55	27.51	52 02.53	− 0 60.61	+ 3.41	−0.02	05.31
28	1683	1702	51 00 43.15	24 31 48.23	46 15.69	+ 4 48.95	+ 0.26	+0.09	04.99
24	1687	1694	18 30 33.50	56 53 16.55	41 55.02	+ 9 11.34	+ 0.37	+0.17	06.90
25	......	......	33.58	16.81	41 55.20	+ 9 12.77	− 3.83	+0.17	04.31
26	......	......	33.68	17.10	41 55.39	+ 9 13.36	− 3.67	+0.17	05.35
28	1692	1702	50 54 41.75	24 31 48.23	43 14.99	+ 7 49.58	+ 0.26	+0.14	04.97
25	1703	1707	49 49 41.58	26 18 27.16	38 04 04.37	−12 57.79	0.00	−0.22	06.36
24	1718	1727	57 55 11.56	17 36 00.52	37 45 36.04	+ 5 32.01	− 1.10	+0.10	07.05
25	......	......	11.82	00.60	36.21	+ 5 29.10	− 0.84	+0.10	04.57
26	......	......	12.13	00.68	36.40	+ 5 27.01	+ 1.47	+0.10	04.98
27	......	......	12.43	00.78	36.60	+ 5 30.23	− 2.10	+0.10	04.83
28	......	......	12.72	00.89	36.80	+ 5 29.87	− 1.00	+0.10	05.77
24	1744	1752	38 04 15.97	37 21 33.76	42 54.87	+ 8 13.15	0.00	+0.14	08.16
25	......	......	16.15	33.95	55.05	+ 8 09.68	+ 2.89	+0.14	07.76
27	......	......	16.56	34.35	55.45	+ 8 15.37	− 5.30	+0.14	05.66
28	......	......	16.77	34.57	55.67	+ 8 11.33	− 2.10	+0.14	05.04
24	1762	1782	56 10 18.48	19 41 16.96	37 55 47.72	− 4 39.75	− 1.26	−0.10	06.61
25	......	......	18.75	17.05	47.90	− 4 40.60	0.00	−0.10	07.20
26	......	......	19.05	17.15	48.10	− 4 38.09	− 1.42	−0.10	08.49
27	......	......	19.35	17.27	48.31	− 4 42.90	− 0.94	−0.10	04.37
24	1792	1801	26 38 53.17	48 44 58.91	37 41 56.04	+ 9 07.76	+ 0.84	+0.16	04.80
25	......	......	53.31	59.18	56.22	+ 9 04.93	+ 3.57	+0.16	04.88
27	......	......	53.60	59.67	56.63	+ 9 12.68	− 7.61	+0.16	01.86
28	1800	1814	28 42 51.87	47 15 40.92	37 59 16.39	− 8 08.15	− 1.31	−0.14	06.79
24	1824	1836	57 13 55.47	18 35 28.34	54 41.90	− 3 32.96	0.00	−0.07	08.87
25	......	......	55.74	28.42	42.08	− 3 39.13	+ 4.67	−0.07	07.55
26	......	......	56.01	28.51	42.27	− 3 31.99	− 3.20	−0.07	07.02
27	......	......	56.37	28.63	42.50	− 3 36.51	− 0.37	−0.07	05.55
28	1833	1853	50 58 22.53	24 41 58.98	50 10.75	+ 0 53.88	+ 0.26	+0.03	04.91
24	1850	1867	20 48 33.23	54 22 52.73	35 42.98	+15 24.12	+ 3.10	+0.26	10.46
25	......	......	33.30	52.93	43.11	+15 27.98	− 2.83	+0.26	08.52

TABLE I.—*Details of latitude work: Station, Spearville*—Continued.

Date.	Star number.		δ_1	δ_2	$\frac{1}{2}(\delta_1+\delta_2)$	$\frac{1}{2}(Z_1-Z_2)$		Correction for refraction.	ϕ
						Micrometer.	Level.		
1889.			° ′ ″	° ′ ″	° ′ ″	′ ″	″	″	° ′ ″
Oct. 27	1850	1867	20 48 33.55	54 22 53.38	37 35 43.46	+15 24.00	−5.14	+0.26	37 51 02.58
26	1859	1873	29 04 16.55	46 39 16.59	51 46.57	− 0 38.66	−1.31	−0.01	06.59
28	....		16.88	17.12	47.00	− 0 38.14	−2.00	−0.01	06.85
24	1883	1888	30 50 20.08	44 45 05.05	47 42.57	+ 3 18.56	+5.20	+0.06	06.39
25	....		20.21	05.27	42.74	+ 3 21.94	+1.21	+0.06	06.07
27	....		20.57	05.78	43.17	+ 3 18.76	+2.99	+0.06	04.98
28	....		20.76	06.05	43.40	+ 3 22.55	+0.58	+0.06	06.64
24	1909	1929	17 14 39.12	58 39 58.61	57 18.87	− 6 14.39	−0.42	−0.12	03.94
25	....		39.19	58.89	19.04	− 6 11.03	−0.26	−0.12	07.63
26	....		39.26	59.20	19.23	− 6 04.54	−8.77	−0.12	05.85
27	....		39.36	59.53	19.44	− 6 11.40	−0.42	−0.12	07.50
24	1937	1957	40 51 16.38	34 41 23.10	46 19.74	+ 4 51.17	−2.20	+0.08	08.79
25	....		16.58	23.26	19.92	+ 4 47.74	+2.68	+0.08	10.42
26	....		16.79	23.46	20.12	+ 4 42.33	+3.41	+0.08	05.94
27	....		17.03	23.67	20.35	+ 4 49.53	−4.09	+0.08	05.89
28	....		17.28	23.86	20.57	+ 4 40.72	+7.10	+0.08	08.56
24	1983	1996	29 02 30.86	46 33 25.25	47 58.05	+ 3 09.68	+0.89	+0.05	08.67
25	....		30.99	25.47	58.23	+ 3 08.18	+1.89	+0.05	08.35
26	....		31.14	25.72	58.43	+ 3 09.63	−1.10	+0.05	07.01
27	....		31.31	25.99	58.65	+ 3 09.59	−5.46	+0.05	02.83
24	2013	2018	17 43 25.31	57 53 53.22	48 39.26	+ 2 24.92	+2.86	+0.05	06.59
25	....		25.36	53.52	39.44	+ 2 23.95	+3.04	+0.05	06.48
26	....		25.44	53.82	39.63	+ 2 30.97	−6.77	+0.05	03.88
27	....		25.54	54.14	39.84	+ 2 25.93	+1.05	+0.05	06.87
28	....		25.63	54.46	40.04	+ 2 26.69	−1.05	+0.05	05.73

Table I—Continued.—*Details of latitude work: Station, Boisé City.*

Date.	Star number.	δ_1	δ_2	$\frac{1}{2}(\delta_1+\delta_2)$	$\frac{1}{2}(Z_1-Z_2)$		Correction for refraction.	ϕ
					Micrometer.	Level.		
1889.		° ′ ″	° ′ ″	° ′ ″	′ ″	″	″	° ′ ″
Nov. 14	1409 1417	61 01 24.00	26 18 10.98	43 39 47.49	− 3 46.12	−2.94	−0.07	43 35 58.36
14	1427 1431	62 35 15.13	24 48 32.91	41 54.02	− 5 53.84	−4.41	−0.11	55.66
14	1470 1473	59 35 54.93	27 46 40.46	41 17.70	− 5 16.39	−3.78	−0.12	57.49
14	([1])	63 00 55.86	24 01 18.08	31 06.97	+ 4 49.15	−0.84	+0.10	55.38
13	([2])	57 51 18.43	29 38 50.3	45 04.37	− 9 06.39	−1.26	−0.16	56.56
13	1581 1584	66 37 08.03	20 32 28.87	34 48.45	+ 1 09.33	−1.05	+0.02	56.75
14	....	08.14	28.85	48.50	+ 1 07.07	+2.89	+0.02	58.48
13	1615 1630	67 30 43.80	19 57 23.70	44 03.75	− 8 06.50	+1.36	−0.16	58.45
14	....	43.96	23.68	03.82	− 8 04.60	+0.31	−0.16	59.37
14	1647 1656	43 27 60.00	43 39 21.00	38 40.50	− 2 45.42	+4.41	−0.04	59.45
13	1647 1662	43 27 59.92	43 43 36.10	35 48.04	+ 0 07.75	+0.32	0.00	56.11
14	....	60.00	36.26	48.13	+ 0 05.69	+6.82	0.00	60.64
12	1669 1681	28 45 10.96	58 21 13.65	33 12.30	+ 2 44.61	+0.10	+0.04	57.05
13	....	11.03	13.84	12.43	+ 2 45.78	−0.79	+0.04	57.46
14	....	11.07	13.99	12.53	+ 2 44.33	+2.10	+0.04	59.00
14	1713 1719	26 30 01.77	60 42 12.20	36 06.98	− 0 10.94	+2.05	−0.00	58.09
13	1747 1758	36 10 34.41	51 24 42.65	47 38.53	−11 38.97	+0.79	−0.20	60.15
14	....	34.51	42.81	38.66	−11 42.24	+2.10	−0.20	58.32
13	1783 1798	27 40 21.85	59 43 15.85	41 48.65	− 5 52.67	+0.89	−0.10	56.97
14	....	21.92	16.06	48.99	− 5 53.56	−0.57	−0.10	54.76
14	1810 1815	40 05 17.82	47 40 60.05	53 08.93	−17 11.22	+2.00	−0.33	59.38
13	1821 1830	23 40 07.73	63 38 58.37	39 33.05	− 3 39.09	+3.78	−0.07	57.67
14	....	07.79	58.62	33.20	− 3 36.51	+1.26	−0.07	57.88
13	1834 1841	60 31 19.03	26 36 46.92	34 02.98	+ 1 54.89	−0.10	+0.03	57.80
14	....	19.25	46.99	03.12	+ 1 53.16	+0.10	+0.03	56.41
13	1871 1874	20 09 13.25	67 11 36.15	40 24.70	− 4 29.10	+0.79	−0.09	56.30
14	....	13.29	36.44	24.87	− 4 28.97	+1.42	−0.09	57.23
14	1885 1894	20 26 58.45	67 14 14.50	50 36.48	−14 32.71	−4.36	−0.29	59.12
13	1893 1906	42 21 36.59	44 57 09.67	39 23.13	− 3 26.74	+4.36	−0.06	60.69
13	1911 1915	42 53 14.89	44 50 20.12	51 47.50	−15 48.09	+1.42	−0.27	60.68
14	....	15.07	20.31	47.69	−15 51.81	+1.36	−0.27	56.97
13	1948 1960	67 29 12.35	19 43 59.69	36 36.02	− 0 35.96	−3.15	−0.01	56.90
14	....	12.65	59.75	36.20	− 0 38.50	−0.05	−0.01	57.74
13	1965 1984	19 32 00.28	68 08 41.42	50 20.85	−14 19.27	−2.05	−0.29	59.24
13	1993 2005	23 02 15.29	64 22 12.56	42 13.92	− 6 18.18	+3.10	−0.12	58.72
14	....	15.37	12.86	14.11	− 6 15.64	+1.42	−0.12	59.77
13	1993 2008	23 02 15.29	64 34 27.72	48 21.50	−12 26.55	+3.10	−0.24	57.81
14	....	15.37	28.00	21.68	−12 25.30	+1.78	−0.24	57.92
13	2001 2005	23 03 31.41	64 22 12.56	42 51.98	− 6 57.32	+3.57	−0.13	58.10
14	....	31.49	12.86	52.17	− 6 55.15	+2.62	−0.13	59.51
13	2001 2008	23 03 31.41	64 34 27.72	48 59.57	−13 05.69	+3.57	−0.25	57.20
14	....	31.49	28.00	59.75	−13 04.80	+2.99	−0.25	57.69

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[1] 30 Cephei. μ Pegasi.

[2] δ Cephei. η Pegasi.

TABLE I—Continued.—*Details of latitude work: Station, Cisco.*

Date.	Star number.	δ_1	δ_2	$\frac{1}{2}(\delta_1+\delta_2)$	$\frac{1}{2}(Z_1-Z_2)$ Micrometer.	$\frac{1}{2}(Z_1-Z_2)$ Level.	Correction for refraction.	ϕ
1889.		° ′ ″	° ′ ″	° ′ ″	′ ″	″	″	° ′ ″
Dec. 4	1510 1519	50 58 47.63	13 58 13.89	32 28 30.76	− 5 03.56	+2.10	−0.10	32 23 29.20
5	....	47.61	13.82	30.71	− 5 02.35	+2.47	−0.10	30.73
4	1531 1537	41 14 38.65	22 59 15.15	06 56.90	+16 30.58	+3.15	+0.28	30.91
5	....	38.62	15.10	56.86	+16 36.18	−2.57	+0.28	30.75
3	1541 1544	24 01 17.65	41 22 22.90	41 50.27	−18 19.54	+2.89	−0.33	33.34
4	....	17.60	22.87	50.23	−18 22.33	+1.47	−0.33	29.04
5	....	17.56	22.85	50.20	−18 15.72	−2.73	−0.33	31.47
4	1557 1562	44 09 59.74	20 10 46.32	10 23.03	+13 05.49	+3.62	+0.23	32.37
5	....	59.74	46.27	23.00	+13 07.07	+0.47	+0.23	30.77
3	1562 1568	20 10 46.38	44 47 12.99	28 59.68	− 5 31.57	+0.63	−0.10	28.64
3	1571 1579	15 38 25.18	49 27 23.54	32 54.36	− 9 24.90	+0.52	−0.17	29.72
4	....	25.12	23.53	54.32	− 9 24.19	+1.15	−0.17	33.31
5	....	25.07	23.54	54.30	− 9 25 95	+0.94	−0.17	29.12
3	1588 1601	45 47 44.13	19 02 01.50	24 52.81	− 1 25.56	+1.36	−0.03	28.58
4	....	44.10	01.43	52.76	− 1 21.03	+2.00	−0.03	33.70
5	....	44.10	01.39	52.74	− 1 28.38	+5.25	−0.03	29.58
5	1609 1629	44 34 03.26	20 13 35.50	23 49.38	− 0 20.30	+3.15	−0.01	32.22
3	1618 1619	41 28 40.43	23 08 19.30	18 29.87	+ 5 03.40	−1.26	+0.09	32.10
4	....	40.44	19.30	29.87	+ 4 57.30	+5.25	+0.09	32.52
4	1636 1652	31 46 54.97	32 53 23.92	20 09.45	+ 3 20.21	+3.31	+0.06	33.03
3	1637 1640	22 47 56.25	42 18 30.17	33 13.21	− 9 44.20	+1.05	−0.17	29.89
5	....	56.18	30.18	13.18	− 9 32.69	−6.77	−0.17	33.55
3	1655 1663	16 12 59.29	48 54 19.53	33 39.41	−10 04.58	−3.99	−0.19	30.65
4	....	59.25	19.58	39.41	−10 08.13	−1.57	−0.19	29.52
3	1693 1707	38 40 15.53	26 18 29.22	29 22.38	− 5 52.47	+0.31	−0.10	30.12
4	....	15.54	29.19	22.37	− 5 56.62	+6.40	−0.10	32.05
5	....	15.56	29.19	22.38	− 5 52.07	+0.42	−0.10	30.63
3	1732 1740	45 27 42.94	19 35 42.14	31 42.21	− 8 13.20	−0.21	−0.14	28.99
4	....	42.99	42.09	42.54	− 8 07.94	−4.67	−0.14	29.79
5	....	43.04	42.08	42.56	− 8 10.25	−1.00	−0.14	31.17
3	1765 1766	49 22 43.87	15 24 56.62	23 50.25	− 0 19.53	−1.00	−0.01	29.71
5	....	44.02	56.54	50.28	− 0 21.11	+1.42	−0.01	30.59
3	1797 1802	34 47 44.11	30 15 35.10	31 39.60	− 8 04.35	−2.62	−0.13	32.50
4	....	44.14	35.20	39.67	− 8 08.55	+1.15	−0.13	32.14
5	....	44.17	35.20	39.69	− 8 08.84	+3.36	−0.13	34.08
3	1831 1844	27 06 42.16	37 54 13.60	30 27 88	− 6 58.98	+1.84	−0.12	30.62
4	....	42.15	13.60	27.87	− 6 57.16	+0.94	−0.12	31.53
2	1875 1886	35 02 17.50	29 30 23.38	16 20.44	+ 7 19.04	−6.56	+0.13	33.07
3	....	17.60	23.38	20.49	+ 7 10.12	+1.36	+0.13	32.10
4	....	17.60	23.41	20.51	+ 7 10.32	+5.98	+0.13	36.94
5	....	17.70	23.44	20.57	+ 7 24.24	−8.56	+0.13	36.38
2	1897 1903	36 48 29.42	28 09 48.44	29 08.93	− 5 38.42	+1.68	−0.09	32.[illegible]0
3	....	29.46	48.45	08.96	− 5 39.55	+0.21	−0.09	29.53
4	....	29.53	48.46	09.00	− 5 37.74	+0.26	−0.09	31.43
5	....	29.58	48.48	09.03	− 5 40.28	+4.09	−0.10	32.74
4	1917 1934	16 30 34.51	48 09 44.26	20 09.39	+ 3 25.05	−1.36	+0.06	33.14
5	....	34.49	44.38	09 44	+ 3 23.37	−0.21	+0.06	32.56
4	1917 1939	16 30 34.51	48 04 19.40	17 26.95	+ 6 07.56	−2.41	+0.11	32.21
5	....	34.49	19.30	26.90	+ 6 05.34	+0.05	+0.11	32.40
4	1927 1934	16 23 07.10	48 09 44.26	16 25.68	+ 7 07.29	−1.26	+0.13	31.84
5	....	07.08	44.38	25.73	+ 7 04.87	+0.26	+0.13	30.99

TABLE I.—*Details of latitude work: Station, Cisco*—Continued.

Date.	Star number.	δ_1	δ_2	$\frac{1}{2}(\delta_1 - \delta_2)$	$\frac{1}{2}(Z_1 + Z_2)$		Correction for refraction.	ϕ
					Micrometer.	Level.		
1889.		° ′ ″	° ′ ″	° ′ ″	′ ″	″	″	° ′ ″
Dec. 4	1927 1939	16 23 07.10	48 04 19.4*	32 13 43.25	+ 9 49.81	−2.31	+0.18	32 23 30.93
5	....	07.08	19.3	43.19	+ 9 46.93	+0.52	+0.18	30.82
3	1936 1939	16 52 10.96	48 04 19.6	28 15.28	− 4 47.34	+2.99	−0.09	30.84
4	1950 1955	40 01 14.81	25 11 23.98	36 19.40	−12 52.38	+5.83	−0.23	32.63
5	....	14.88	24.00	19.44	−12 48.74	+0.05	−0.23	30.52
5	1964 1965	45 35 18.32	19 32 00.75	33 39.53	−10 06.92	+0.10	−0.19	32.52
5	1969 1976	10 17 36.76	54 36 14.29	26 55.53	− 3 26.34	+0.84	−0.07	30.10
4	1976 1978	54 36 14.13	10 29 50.82	33 02.48	− 9 28.38	−3.04	−0.18	30.68
5	....	14.29	50.78	02.53	− 9 32.49	+0.21	−0.18	30.13
2	1993 2010	23 02 16.20	41 48 08.5*	25 12.35	− 1 38.55	−3.20	−0.03	30.57
3	....	16.19	08.6	12.40	− 1 42.87	+1.73	−0.03	31.23
4	....	16.20	08.7	12.45	− 1 41.25	+0.05	−0.03	31.22
5	....	16.20	08.9	12.55	− 1 42.10	+0.31	−0.03	30.96
2	2010 ([1])	41 48 08.5*	22 56 30.8*	22 19.65	+ 1 11.47	0.00	+0.02	31.14
3	....	08.6	30.9	19.75	+ 1 12.00	+0.63	+0.02	32.40
4	....	08.7	30.9	19.80	+ 1 09.17	+1.57	+0.02	30.56
5	....	08.9	31.0	19.95	+ 1 09.21	+2.57	+0.02	31.75

[1] α Arietis.

* Declinations taken from Berliner Jahrbuch.

TABLE I—Continued.—*Details of latitude work: Station, Sierra Blanca.*

Date.	Star number.	δ_1	δ_2	$\frac{1}{2}(\delta_1+\delta_2)$	$\frac{1}{2}(Z_1-Z_2)$		Correction for refraction.	ϕ
					Micrometer.	Level.		
1890.		° ′ ″	° ′ ″	° ′ ″	′ ″	″	″	° ′ ″
May 17	8 13	21 09 18.50	41 16 28.28	31 12 53.39	— 2 26.41	+0.58	—0.05	31 10 27.51
18	....	18.62	28.45	12 53.54	— 2 26.01	+0.42	—0.05	27.90
18	19 23	23 38 46.87	38 30 53.85	04 50.36	+ 5 37.98	—1.37	+0.14	27.23
17	56 66	25 10 33.68	37 01 59.77	06 16.72	+ 4 09.00	—0.37	+0.08	25.43
18	....	33.87	59.95	06 16.91	+ 4 10.73	+1.42	+0.09	29.15
17	68 79	17 41 44.81	44.42 26.38	12 05.60	— 1 37.30	+0.84	—0.03	29.11
18	....	44.91	26.57	12 05.74	— 1 33.46	—4.41	—0.03	27.84
17	92 102	49 04 07.12	13 00 58.45	02 32.78	+ 7.53.38	—1.00	+0.18	25.34
18	....	07.32	58.56	02 32.94	+ 7 54.63	—0.16	+0.18	27.59
17	109 112	44 08 56.39	18 00 09.73	04 33.06	+ 5 53.84	+2.47	+0.13	29.50
18	....	56.58	09.86	04 33.22	+ 5 54.37	—2.10	+0.13	25.62
17	122 132	24 25 04.43	38 00 38.45	12 51.44	— 2 26.09	0.00	—0.05	25.30
18	....	04.57	38.63	12 51.65	— 2 26.09	—0.74	—0.05	24.77
17	142 152	12 08 27.87	50 15 45.28	12 06.58	— 1 42.58	+3.10	—0.03	27.07
18	....	27.98	45.52	12 06.75	— 1 40.81	—0.53	—0.08	25.38
17	173 175	24 55 06.36	37 44 49.11	19 57.74	— 9 32.37	+1.68	—0.21	26.84
18	....	06.52	49.33	19 57.92	— 9 30.71	+1.68	—0.21	28.68
18	184 186	51 16 35.72	11 18 16.87	17 26.30	— 6 58.53	—2.68	—0.15	24.94
17	197 201	23 15 19.52	39 03 20.43	09 19.98	+ 1 08.89	+0.58	+0.02	29.47
18	....	19.70	20.66	09 20.18	+ 1 08.20	+1.00	+0.02	29.40
17	197 205	23 15 19.52	39 05 39.56	10 29.54	— 0 01.41	+0.58	0.00	28.71
17	207 220	49 51 50.00	12 42 30.80	17 10.40	— 6 40.74	—0.16	—0.13	29.37
18	....	50.23	30.93	17 10.58	— 6 46.34	+4.78	—0.14	28.88
17	226 233	40 52 53.01	21 29 31.74	11 12.38	— 0 45.88	0.00	—0.02	26.48
18	....	53.26	31.91	11 12.58	— 0 45.76	+0.11	—0.02	27.15
17	240 252	18 12 13.23	44 22 43.47	17 28.35	— 6 59.95	+2.52	—0.18	30.74
18	....	13.39	43.72	17 28.56	— 6 57.16	+0.37	—0.15	31.62
17	257 262	32 48 48.48	29 37 11.64	13 00.04	— 2 31.61	+0.32	—0.07	28.68
18	....	48.65	11.85	13 00.25	— 2 31.58	—2.42	—0.05	26.20
18	272 273	15 46 18.95	46 35 40.39	10 59.67	— 0 35.11	+3.26	—0.01	28.02
17	287 298	19 43 17.25	42 17 35.02	26.14	+10 01.26	—0.42	+0.23	27.21
18	....	17.43	35.29	26.36	+10 01.34	+0.32	+0.23	28.25
17	312 323	44 52 47.77	17 25 47.20	09 17.48	+ 1 08.44	+0.32	+0.02	26.26
18	....	48.05	47.38	09 17.76	+ 1 11.07	—0.95	+0.02	27.90
17	344 346	40 04 53.52	22 28 51.13	16 52.32	— 6 25.36	+1.00	—0.14	27.82
18	....	53.79	51.34	16 52.56	— 6 25.80	—1.05	—0.14	25.60
17	349 350	25 26 32.93	36 52 43.19	09 38.06	+ 0 50.93	+0.53	+0.02	29.61
18	....	33.17	43.46	09 38.32	+ 0 50.28	+0.11	+0.02	29.29
17	367 373	19 23 21.61	42 34 50.95	30 59 06.28	+11 19.15	+1.05	+0.26	26.74
18	....	21.81	51.24	30 59 06.52	+11 18.42	+2.57	+0.26	27.77
17	423 431	15 27 52.66	47 09 35.42	31 18 44.04	— 8 17.79	+3.99	—0.18	30.06
18	....	52.86	35.78	18 44.30	— 8 21.42	+2.31	—0.19	25.00
17	456 460	26 24 15.21	35 59 52.01	12 03.61	— 1 38.23	+3.99	—0.03	29.34
18	....	15.47	52.29	12 03.88	— 1 36.29	—0.42	—0.03	27.14
17	469 484	16 01 11.24	46 20 27.89	10 49.56	— 0 23.20	+0.48	—0.01	26.83
18	....	11.44	28.20	10 49.82	— 0 24.29	+2.36	—0.01	27.88
17	495 496	45 18 20.55	16 56 57.48	05 09.02	+ 5 16.11	+2.99	+0.12	28.24
18	....	20.87	57.68	05 09.28	+ 5 19.50	—1.58	+0.11	27.52
18	508 520	42 39 19.42	19 24 37.74	01 58.58	+ 8 28.60	—0.89	+0.19	26.48
17	509 524	29 25 16.57	32 35 19.54	18.06	+10 10.95	—0.16	+0.23	29.08

TABLE II.—*Results for latitude. Station, Spearville, Kansas.*

Star numbers and class.		Individual results.					Mean.	Weight.
		Oct. 24.	Oct. 25.	Oct. 26.	Oct. 27.	Oct. 28.		
		° ′ ″	″	″	″	″	″	
1261A	1274A	37 51	04.41	....	....	....	04.41	0.9
1287A	1313A	....	07.83	....	....	....	07.83	0.9
1320A	1326C	....	05.52	....	....	....	05.52	0.8
1359A	1372A	....	06.79	....	....	....	06.79	0.9
1424A	1438C	08.14	09.79	....	....	....	08.96	1.3
1448B	1475C	07.30	....	....	....	....	07.30	0.8
1450B	1464C	....	03.84	....	....	....	03.84	0.8
1500A	1502B	....	03.77	....	....	....	03.77	0.9
1535B	1539B	06.41	07.98	....	....	....	07.19	1.5
1558B	1559C	07.27	07.86	07.79	....	....	07.64	1.5
1579A	1598A	....	06.31	06.34	....	....	06.32	1.7
1608A	1619A	08.71	06.83	05.83	....	....	07.12	2.4
1645B	1658A	05.39	05.11	05.31	....	....	05.27	2.2
1683B	1702A	....	....	....	....	04.99	04.90	0.9
1687AA	1694A	06.90	04.31	05.35	....	....	05.52	2.6
1692B	1702A	....	....	....	....	04.97	04.97	0.9
1703C	1707A	....	06.36	....	....	....	06.36	0.8
1718A	1727B	07.05	04.57	04.98	04.83	05.77	05.44	3.1
1744A	1752A	08.16	07.76	....	05.66	05.04	06.65	3.0
1762C	1782A	06.61	07.20	08.49	04.37	....	06.67	1.9
1792C	1801B	04.80	04.88	....	01.86	....	03.85	1.5
1800AA	1814A	....	....	....	....	06.79	06.79	1.0
1824A	1836A	08.87	07.55	07.02	05.55	....	07.25	2.0
1833B	1853B	....	....	....	....	04.91	04.91	0.9
1850C	1867A	10.46	08.52	....	02.58	....	07.19	1.6
1859B	1873B	....	....	06.59	....	06.85	06.72	1.5
1883B	1888B	06.39	06.07	....	04.98	06.64	06.02	2.5
1909A	1929C	03.94	07.68	05.85	07.50	....	06.23	1.9
1937B	1957A	08.79	10.42	05.94	05.89	08.56	07.92	3.1
1983A	1996C	08.67	08.35	07.01	02.83	....	06.72	1.9
2013A	2018C	06.59	06.48	03.88	06.87	05.73	05.91	2.1

Weighted mean, 37° 51′ 06″.34 ± 0″.14.

Table II—Continued.—*Results for latitude: Station, Boisé City, Idaho.*

Star numbers and class.		Individual results.			Mean.	Weight.
		Nov. 12.	Nov. 13.	Nov. 14.		
		° ′ ″	″	″	″	
1409A	1417C	43 35	....	58.36	58.36	0.8
1427B	1431A	....	....	55.66	55.66	0.9
1470B	1473A	....	....	57.49	57.49	0.9
30 Cephei AA	μ Pegasi AA	....	....	55.38	55.38	1.0
δ Cephei AA	η Pegasi AA	....	56.56	....	56.56	1.0
1581A	1584C	....	56.75	58.48	57.62	1.3
1615A	1630A	....	58.45	59.37	58.91	1.7
1647C	1656B	....	....	59.45	59.45	0.8
1647C	1662A	....	56.11	60.64	58.47	1.3
1669A	1681B	57.05	57.46	59.00	57.84	2.2
1713A	1719B	....	....	58.09	58.09	0.9
1747A	1758B	....	60.15	58.32	59.24	1.6
1783B	1798B	....	56.97	54.76	55.87	1.5
1810B	1815A	....	....	59.38	59.38	0.9
1821A	1830A	....	57.67	57.88	57.77	1.7
1834A	1841A	....	57.80	56.41	57.10	1.7
1871B	1874B	....	56.30	57.23	56.77	1.5
1885B	1894B	....	....	59.12	59.12	0.9
1893C	1906A	....	60.69	....	60.69	0.8
1911B	1915B	....	60.68	56.97	58.83	1.5
1948A	1960B	....	56.90	57.74	57.32	1.6
1965B	1984A	....	....	59.24	59.24	0.9
1993A	2005A	....	58.72	59.77	59.25	1.7
1993A	2008B	....	57.81	57.92	57.86	1.6
2001A	2005A	....	58.10	59.51	58.80	1.7
2001A	2008B	....	57.20	57.69	57.45	1.6

Weighted mean, 43° 35′ 57″.98±0″.16.

TABLE II—Continued.—*Results for latitude: Station, Cisco, Texas.*

Star numbers and class.		Individual results.				Mean.	Weight.
		Dec. 2.	Dec. 3.	Dec. 4.	Dec. 5.		
		° ′ ″	″	″	″	″	
1510B	1519C	32 23	....	29.20	30.73	29.97	1.2
1531A	1537A	....	....	30.91	30.75	30.83	1.7
1541A	1544C	....	33.34	29.04	31.47	31.28	1.6
1557B	1562A	....	....	32.37	30.77	31.57	1.6
1562A	1568C	....	28.64	....	....	28.64	0.8
1571C	1579A	....	29.72	33.21	29.12	30.68	1.6
1588B	1601C	....	28.58	33.70	29.58	30.62	1.5
1609C	1629B	....	....	....	32.22	32.22	0.8
1618A	1619A	....	32.10	32.52	....	32.31	1.7
1636A	1652A	....	....	33.03	....	33.03	0.9
1637A	1640B	....	29.89	....	33.55	31.72	1.6
1655A	1663C	....	30.65	29.52	....	30.08	1.3
1693C	1707A	....	30.12	32.05	30.63	30.93	1.6
1732A	1740AA	....	28.99	29.79	31.17	29.98	2.6
1765B	1766A	....	29.71	....	30.59	30.15	1.6
1797A	1802A	....	32.50	32.14	34.08	32.91	2.4
1831A	1844AA	....	30.62	31.53	....	31.15	1.8
1875AA	1886A	33.07	32.10	36.94	36.38	34.62	3.2
1897C	1903A	32.10	29.53	31.43	32.74	31.45	1.9
1917B	1934B	....	....	33.14	32.56	32.85	1.5
1917B	1939AA	....	....	32.21	32.40	32.30	1.7
1927A	1934B	....	....	31.84	30.99	31.42	1.6
1927A	1939AA	....	....	30.93	30.82	30.88	1.8
1936B	1939AA	....	30.84	....	....	30.84	0.9
1950A	1955C	....	....	32.63	30.52	31.58	1.3
1964C	1965B	....	....	....	32.52	32.52	0.8
1969C	1976C	....	....	....	30.10	30.10	0.7
1976C	1978A	....	....	30.88	30.13	30.50	1.3
1993A	2010AA	30.57	31.23	31.22	30.96	30.99	3.2
2010AA	(1)	31.14	32.40	30.56	31.75	31.46	3.5

[1] α Arietis AA.

Weighted mean, 32° 23′ 31″,45 ± 0″,15,

TABLE II—Continued.—*Results for latitude: Station, Sierra Blanca, Texas.*

Star numbers and class.		Individual results.		Mean.	Weight.
		May 17.	May 18.		
		° ′ ″	″	″	
8A	13A	31 10 27.51	27.90	27.70	1.7
19A	23C	....	27.23	27.23	0.8
56A	66B	25.43	29.15	27.29	1.6
68A	79B	29.11	27.84	28.47	1.6
92B	102A	25.34	27.59	26.46	1.6
109C	112A	29.50	25.62	27.56	1.3
122B	132A	25.30	24.77	25.04	1.6
142B	152B	27.07	25.38	26.22	1.5
173B	175A	26.84	28.68	27.76	1.6
184C	186B	....	24.94	24.94	0.8
197A	201C	29.47	29.40	29.44	1.3
197A	205C	28.71	....	28.71	0.9
207AA	220B	29.37	28.88	29.12	1.7
226C	233C	26.48	27.15	26.82	1.0
240C	252A	30.74	31.62	31.18	1.3
257A	262B	28.68	26.20	27.44	1.6
272C	273A	....	28.02	28.02	0.8
287A	293A	27.21	28.25	27.73	1.7
312A	323B	26.26	27.90	27.08	1.6
344A	346B	27.82	25.69	26.75	1.6
349B	359C	29.61	29.29	29.45	1.2
367B	373B	26.74	27.77	27.26	1.5
423A	431B	30.06	25.00	27.53	1.6
456A	460A	29.34	27.14	28.24	1.7
469A	484A	26.83	27.88	27.36	1.7
495A	496B	28.24	27.52	27.88	1.6
503B	520AA	....	26.48	26.48	0.9
509A	524A	29.08	....	29.08	0.9

Weighted mean, 31° 10′ 27″.64±0″.16.

LONGITUDES.

(5) The methods of observation and computation adopted in the time work were substantially the same as those followed by Prof. Pritchett and myself in 1884–'85, and described at length in Bulletin No. 49 of U. S. Geological Survey. In the work of 1889–'90, however, equal weights were given to the mean transits of the stars. Nearly all of the stars observed fell in declination between —20° and +65°; so that the theoretical inequality in weights would be slight, while experience seems to justify the conclusion that in a well arranged time determination the application of weights is an illusory refinement.

In 1889 Prof. Pritchett observed, in general, transits on five lines of the diaphragm. In 1890 he observed, in general, on seven lines. At all the field stations and in the personal equation work at St. Louis, the writer observed, as a rule, on five lines. Departures from this rule occurred only when transits were broken by clouds or rendered uncertain by atmospheric unsteadiness. It would appear that, under ordinarily favorable conditions, the advantages of the use of a greater number of lines than five are inappreciable.

The details of the time work are given in Table III following. The first column in these tables gives the name of the star observed; the second, the position of the clamp; the third, the azimuth factor; the fourth, the collimation factor; the fifth gives the observed time *t* of transit of the star, corrected for inclination of horizontal axis and for daily aberration; and the last column gives the residuals *v* resulting from the substitution of the derived clock correction, azimuth, and collimation in the observation equations.

The right ascensions used were taken either directly from the Berliner Jahrbuch or reduced to the Jahrbuch system.

Along with each of the Tables III are given the normal equation for the clock correction, the resulting clock correction with the corresponding epoch, and the adopted azimuths and collimation.

A preliminary computation of the results from Prof. Pritchett's observations in 1889 was made by him during the course of the work. This computation was revised and checked during the winter of 1889-'90 by Mr. S. S. Gannett. The observations made by Prof. Prichett for the determination of Sierra Blanca, Texas, were completely reduced by him, all computations and readings of chronograph sheets being carefully checked. The results from my time observations were computed during the progress of the work and subsequently revised also by me.

(6) *Personal equation work.*—In the work of 1889, observations for personal equation were made at the observatory at St. Louis on two nights after the observations at the field stations were completed. The transits were set up on piers 4.2 feet apart and the difference in longitude of these observed, each observer using his own transit, transit key, chronograph, and electric apparatus, precisely as in the longitude work. For the longitude of Sierra Blanca in 1890, the same method of determining personal equation was adopted; and observations were made on three nights before and on four nights after the work at Sierra Blanca. The details of the time work for personal equation are given along with the other time work at St. Louis.

TABLE III.—*Details of time work.*

[Spearville, Kansas, October 27, 1889. Before signals. Observer, Woodward.]

Name of star.	Clamp.	A	C	t			v
				h.	m.	s.	s.
ν Aquarii	W.	+0.7788	+1.022	21	01	23.32	+.02
ζ Cygni		+0.1618	1.152		03	42.66	+.02
α Equulei		+0.5474	1.004		10	21.81	—.04
α Cephei		—0.8791	2.139		17	32.44	—.05
ζ Capricorni	W.	+0.9470	+1.086		19	59.64	+.11
β Cephei	E.	—1.5654	—2.935		29	35.66	—.05
74 Cygni		—0.0471	1.308		33	14.03	—.14
ε Pegasi		+0.4833	1.013		38	54.10	+.01
δ Capricorni		+0.8494	1.044		40	41.71	+.11
π² Cygni	E.	—0.2885	—1.518		43	41.48	+.05

Normal equation, $10\Delta t + 1.5559a_w - 0.5683a_e - 1.413c + 328^s.98 = 0$

Adopted $a_w = +64^s.48$ $a_e = +64^s.35$ $c = +0^s.25$

Chronometer fast $39^s.23$ at $21^h.41$.

[Spearville, Kansas, October 27. After signals. Observer, Woodward.]

Name of star.	Clamp.	A	C	t			v
				h.	m.	s.	s.
7 Lacertæ	E.	—0.3181	—1.547	22	27	45.54	+.20
η Aquarii		+0.6231	1.000		29	40.75	+.14
ζ Pegasi		+0.4707	1.016		36	06.95	+.12
η Pegasi		+0.1642	1.150		38	18.73	—.29
ι Cephei	E.	—1.1290	—2.422		47	38.75	—.20
o Androm.	W.	—0.0908	+1.340		57	35.99	+.01
α Pegasi		+0.4077	1.033		59	23.83	—.02
π Cephei		—2.2914	3.813	23	07	31.81	—.04
τ Pegasi		+0.2762	1.087		15	32.08	—.03
κ Piscium	W.	+0.6046	+1.000		21	16.98	+.06

Normal equation, $10\Delta t - 1.0937a_w - 0.1891a_e + 1.138c + 474^s.58 = 0$

Adopted $a_w = +64^s.29$ $a_e = +64^s.29$ $c = +0^s.24$

Chronometer fast $39^s.24$ at $22^h.87$.

TABLE III.—*Details of time work*—Continued.

[Spearville, Kansas, October 28, 1889. Before signals. Observer, Woodward.]

Name of star.	Clamp.	*A*	*C*	*t*	*v*
				h. m. s.	s.
ν Aquarii	W.	+0.78	+1.02	21 04 13.41	—.03
ζ Cygni		+0.16	1.15	08 53.41	+.05
α Equulei		+0.53	1.00	10 57.13	.00
α Cephei		—0.88	2.14	15 36.72	—.02
ζ Capricorni	W.	+0.95	+1.09	21 00.36	—.08
β Cephei	E.	—1.56	—2.93	27 55.73	+.04
74 Cygni		—0.05	1.30	33 11.30	+.03
ε Pegasi		+0.50	1.01	39 25.17	+.04
δ Capricorni		+0.85	1.04	41 35.89	—.02
π² Cygni	E.	—0.29	—1.52	43 23.05	—.04

Normal equation, $10\Delta t+1.54a_w-0.55a_e-1.40c+4^s.51=0$

Adopted $a_w=+0^s.55$ $a_e=+0^s.55$ $c=+0^s.135$

Chronometer fast $39^s.49$ at $21^h.41$.

[Spearville, Kansas, October 28, 1889. After signals. Observer, Woodward.]

Name of star.	Clamp.	*A*	*C*	*t*	*v*
				h. m. s.	s.
7 Lacertæ	E.	—0.31	—1.55	22 27 25.14	—.10
η Aquarii		+0.62	1.00	30 20.40	.00
ζ Pegasi		+0.47	1.02	36 36.97	+.03
η Pegasi		+0.16	1.15	38 29.61	—.01
ι Cephei	E.	—1.13	—2.42	46 27.30	+.09
δ Aquarii	W.	+0.85	+1.04	49 36.45	—.09
o Androm		—0.09	1.34	57 30.73	+.06
α Pegasi		+0.41	1.03	59 55.21	.00
π Cephei		—2.29	3.81	23 04 06.87	—.07
τ Pegasi	W.	+0.28	+1.09	15 50.12	+.03

Normal equation, $10\Delta t-0.84a_w-0.19a_e+1.17c+6^s.29=0$

Adopted $a_w=+0^s.74$ $a_e=+0^s.74$ $c=+0^s.12$

Chronometer fast $39^s.57$ at $22^h.81$.

TABLE III.—*Details of time work*—Continued.

[Spearville, Kansas, November 2, 1889. Before signals. Observer, Woodward.]

Name of star.	Clamp.	A	C	t			v
				h.	m.	s.	s.
β Aquarii	W.	+0.70	+1.01	21	26	23.29	−.01
β Cephei		−1.56	2.93		28	03.05	−.09
ε Pegasi		+0.50	1.01		39	25.34	+.07
π² Cygni		−0.29	1.52		43	26.07	.00
16 Pegasi	W.	+0.24	+1.11		48	43.06	+.03
θ Pegasi	E.	+0.54	−1.00	22	05	17.18	−.01
2 Cephei		−1.79	3.20		08	31.77	+.18
θ Aquarii		+0.73	1.01		11	38.93	−.07
ν Aquarii		+0.64	1.00		16	36.18	+.01
7 Lacertæ	E.	−0.31	−1.55		27	27.97	−.11

Normal equation, $10\Delta t-0.60a-0.18c+119^s.29=0$

Adopted $a_w=+4^s.30$ $a_e=+4^s.30$ $c=-0^s.04$

Chronometer fast $41^s.67$ at $21^h.93$

[Spearville, Kansas, November 2, 1889. After signals. Observer, Woodward.]

Name of star.	Clamp.	A	C	t			v
				h.	m.	s.	s.
o Androm.	E.	−0.09	−1.34	22	57	32.98	−.08
α Pegasi		+0.41	1.03		59	55.78	−.01
π Cephei		−2.29	3.81	23	05	17.37	+.01
γ Piscium	E.	+0.58	−1.00		12	05.98	+.06
τ Pegasi	W.	+0.28	+1.09		15	51.29	+.01
4 Cassiopeæ		−0.85	2.11		20	43.01	+.09
70 Pegasi		+0.44	1.02		24	14.42	−.02
72 Pegasi		+0.14	1.16		29	10.17	−.06
γ Cephei	W.	−2.81	+4.45		35	46.99	−.01

Normal equation, $9\Delta t-4.19a+2.65c+123^s.24=0$

Adopted $a_w=+4^s.38$ $a_e=+4^s.38$ $c=-0^s.05$

Chronometer fast $41^s.64$ at $23^h.26$.

TABLE III.—*Details of time work*—Continued.

[Boisé City, Idaho, November 15, 1889. Before signals. Observer, Woodward.]

Name of star.	Clamp.	*A*	*C*	*t*			*v*
				h.	*m.*	*s.*	*s.*
α Aquarii	W.	+0.70	+1.00	22	00	41.48	+.04
θ Pegasi		+0.62	1.01		05	12.68	—.06
ζ Cephei		—0.45	1.87		07	39.09	+.10
3 Lacertæ	W.	—0.23	+1.61		19	50.15	—.11
7 Lacertæ	E.	—0.16	—1.65		27	22.36	+.06
η Aquarii		+0.70	1.00		30	16.34	+.10
ζ Pegasi		+0.56	1.02		36	32.99	—.02
λ Pegasi		+0.38	1.09		41	48.94	—.07
ι Cephei	E.	—0.91	—2.42		46	25.20	—.08

Normal equation, $9\Delta t+1.21a-1.59c+58^{s}.30=0$

Adopted $a_{w}=+2^{s}.43$ $a_{e}=+2^{s}.43$ $c=+0^{s}.22$

Chronometer fast $36^{s}.77$ at $22^{h}.40$.

[Boisé City, Idaho, November 15, 1889. After signals. Observer, Woodward.]

Name of star.	Clamp.	*A*	*C*	*t*			*v*
				h.	*m.*	*s.*	*s.*
ω Piscium	E.	+0.61	—1.01	23	54	14.45	+.06
β Cassiopeæ		—0.49	1.92	0	03	56.86	+.04
γ Pegasi		+0.50	1.03		08	09.26	—.03
ι Ceti	E.	+0.81	—1.01		14	23.66	+.01
12 Ceti	W.	+0.75	+1.00		24	50.60	+.09
ζ Cassiopeæ		—0.28	1.67		31	27.59	+.05
δ Androm.		+0.27	1.16		34	02.05	—.01
21 Cassiopeæ		—1.90	3.71		39	05.43	—.14
ζ Androm.	W.	+0.37	+1.09		42	05.43	—.06

Normal equation, $9\Delta t+0.64a+3.66c+57^{s}.72=0$

Adopted $a_{w}=+2^{s}.37$ $a_{e}=+2^{s}.37$ $c=+0^{s}.22$

Chronometer fast $36^{s}.68$ at $0^{h}.35$.

TABLE III.—*Details of time work*—Continued.

[Boisé City, Idaho, November 23, 1889. Before signals. Observer, Woodward.]

Name of star.	Clamp.	*A*	*C*	*t*			*v*
				h.	*m.*	*s.*	*s.*
θ Pegasi	W.	+0.62	+1.01	22	05	18.65	—.04
θ Aquarii		+0.80	1.01		11	41.41	+.12
γ Aquarii		+0.71	1.00		16	38.02	—.07
3 Lacertæ		—0.23	1.61		19	54.46	—.07
δ Cephei	W.	—0.46	+1.88		25	45.95	+.06
10 Lacertæ	E.	+0.11	—1.28		34	59.00	—.07
ζ Pegasi		+0.56	1.02		36	37.89	—.04
η Pegasi		+0.28	1.15		38	30.19	—.03
λ Pegasi		+0.38	1.09		41	53.46	+.07
ι Cephei		—0.91.	2.42		46	26 15	+.15
π Cephei	E.	—1.97	—3.81	23	05	04.69	—.19

Normal equation, $11\Delta t+1.44\,a_w-1.55\,a_e-4.26c+449^s.64=0$

Adopted $a_w=+0^s.26$ $a_e=+0^s.26$ $c=-0^s.27$

Chronometer fast $40^s.98$ at $22^h.52$.

[Boisé City, Idaho, November 23, 1889. After signals. Observer, Woodward.]

Name of star.	Clamp.	*A*	*C*	*t*			*v*
				h.	*m.*	*s.*	*s.*
α Androm	E.	+0.30	—1.14	00	03	21.80	—.10
γ Pegasi		+0.50	1.03		08	14.00	—.01
ι Ceti		+0.81	1.01		14	29.15	+.12
ζ Cassiopeæ	E.	—0.28	—1.67		31	31.01	+.02
δ Androm	W.	+0.27	+1.16		34	07.50	+.08
21 Cassiopeæ		—1.90	3.72		39	07.38	+.07
ζ Androm		+0.37	1.09		42	11.12	+.10
γ Cassiopeæ		—0.57	2.01		50	45.95	—.13
ε Piscium		+0.60	1.01		57	54.50	—.04
β Androm	W.	+0 18	+1.22	1	04	15.12	—.12

Normal equation, $10\Delta t+0.28a+5.36c+410^s.98=0$

Adopted $a_w=+0^s.28$ $a_e=+0^s.29$ $c=-0^s.29$

Chronometer fast $40^s.95$ at $0^h.57$.

TABLE III.—*Details of time work*—Continued.

[Boisé City, Idaho, November 24, 1889. Before signals. Observer, Woodward.]

Name of star.	Clamp.	*A*	*C*	*t*	*v*
				h. m. s.	*s.*
7 Lacertæ	W.	−0.16	+1.55	22 27 25.88	+.10
η Aquarii		+0.70	1.00	30 21.73	+.04
ζ Pegasi		+0.56	1.02	36 38.13	−.02
λ Pegasi		+0.38	1.09	41 53.74	.00
ι Cephei	W.	−0.91	+2.42	46 26.92	−.09
β Pegasi	E.	+0.31	−1.13	59 05.82	−.09
π Cephei		−1.97	3.81	23 05 04.95	+.05
τ Pegasi		+0.38	1.09	15 50.98	−.02
4 Cassiopeæ		−0.65	2.11	20 37.24	−.07
70 Pegasi	E.	+0.53	−1.02	24 14.92	+.05

Normal equation, $10\Delta t+0.57a_w-1.40a_e-2.08c+407^s.96=0$

Adopted $a_w=+0^s.29$ $a_e=+0^s.31$ $c=-0^s.23$

Chronometer fast $40^s.82$ at $22^h.91$.

[Boisé City, Idaho, November 24, 1889. After signals. Observer, Woodward.]

Name of star.	Clamp.	*A*	*C*	*t*	*v*
				h. m. s.	*s.*
α Androm	E.	+0.30	−1.14	0 03 21.72	−.05
γ Pegasi		+0.50	1.03	08 13.91	+.01
ι Ceti		+0.81	1.01	14 28.98	+.03
ζ Cassiopeæ	E.	−0.28	−1.67	31 30.80	+.01
21 Cassiopeæ	W.	−1.90	+3.71	39 07.10	−.01
ζ Androm		+0.37	1.09	42 10.82	+.08
γ Cassiopeæ		−0.57	2.01	50 45.78	−.02
ε Piscium	W.	+0.60	+1.01	57 54.18	−.06

Normal equation, $8\Delta t-1.50a_w+1.33a_e+2.97c+326^s.96=0$

Adopted $a_w=+0^s.36$ $a_e=+0^s.16$ $c=-0^s.25$

Chronometer fast $40^s.74$ at $0^h.51$.

TABLE III.—*Details of time work*—Continued.

[Cisco, Texas, December 8, 1889. Before signals. Observer, Woodward.]

Name of star.	Clamp.	A	C	t			v
				h.	m.	s.	s.
τ Pegasi	W.	+0.1763	+1.09	23	15	12.64	—.03
70 Pegasi		+0.3513	1.02		21	39.52	+.10
41 H. Cephei		—1.4729	2.58		42	14.27	+.05
φ Pegasi		+0.2530	1.05		46	56.15	+.14
ω Piscium		+0.4432	1.01		53	45.34	.00
β Cassiopeæ		—0.8446	1.92	0	03	03.60	—.19
γ Pegasi	W.	+0.3162	+1.03		07	37.83	—.09
12 Ceti	E.	+0.6032	—1.00		24	33.86	+.07
ζ Cassiopeæ		—0.5969	1.67		29	39.69	+.03
α Cassiopeæ		—0.7132	1.78		34	03.14	+.03
β Ceti		+0.8198	1.06		38	15.87	—.14
ζ Androm	E.	+0.1656	—1.09		41	31.74	+.01

Normal equation, $12\Delta t-0.7775a_w+0.2785a_e+2.11c-15^s.31=0$

Adopted $a_w=-16^s.20$ $a_e=-16^s.31$ $c=-0^s.07$

Chronometer slow $0^s.62$ at $0^h.08$.

[Cisco, Texas, December 8, 1889. After signals. Observer, Woodward.]

Name of star.	Clamp.	A	C	t			v
				h.	m.	s.	s.
ε Cassiopeæ	E.	—1.1309	—2.21	1	46	10.07	+.02
β Arietis		+0.2239	1.07		48	36.31	—.02
ν Ceti		+0.8703	1.07		55	02.70	+.10
τ Androm		—0.2194	1.34		57	04.32	+.02
α Arietis	E.	+0.1783	—1.08	2	01	00.06	—.12
67 Ceti	W.	+0.6383	+1.01		11	39.51	+.02
ζ² Ceti		+0.4175	1.01		22	24.62	—.12
36 H. Cassiopeæ		—2.1162	3.30		27	01.55	—.06
ν Arietis		+0.2033	1.07		32	36.98	+.17
θ Persei	W.	—0.4276	+1.52		36	33.87	—.03

Normal equation, $10\Delta t-1.2847a_w-0.0778a_e+1.14c-27^s.52=0$

Adopted $a_w=-16^s.33$ $a_e=-16^s.33$ $c=-0^s.11$

Chronometer slow $0^s.54$ at $2^h.17$.

TABLE III—*Details of time work.*—Continued.

[Cisco, Texas, December 10, 1889. Before signals. Observer, Woodward.]

Name of star.	Clamp.	*A*	*C*	*t*			*v*
				h.	*m.*	*s.*	*s.*
φ Pegasi	W.	+0.26	+1.06	23	46	54.79	+.11
ω Piscium		+0.45	1.01		53	41.01	—.01
β Cassiopeæ		—0.84	1.92	0	03	19.70	.00
γ Pegasi		+0.32	1.03		07	35.54	—.07
ι Ceti	W.	+0.68	+1.01		13	50.86	+.01
12 Ceti	E.	+0.61	—1.00		24	27.11	+.06
ζ Cassiopeæ		—0.59	1.67		30	51.90	—.05
α Cassiopeæ		—0.70	1.78		34	17.37	.00
β Ceti		+0.82	1.06		38	05.74	—.07
ζ Androm		+0.17	1.09		41	31.89	—.07
γ Cassiopeæ		—0.92	2.01		50	05.89	+.10
ε Piscium	E.	+0.43	—1.01		57	15.73	+.04

Normal equation, $12\Delta t + 0.85a_w — 0.18a_e — 3.59\ c + 26^s.31 = 0$

Adopted $a_w = —0^s.40$ $a_e = — 0^s.40$ $c = + 0^s.02$

Chronometer fast $2^s.17$ at $0^h.39$.

[Cisco, Texas, December 10, 1889. After signals. Observer, Woodward.]

Name of star.	Clamp.	*A*	*C*	*t*			*v*
				h.	*m.*	*s.*	*s.*
φ Persei	E.	—0.47	—1.56	1	36	47.78	—.03
o Piscium		+0.41	1.01		39	36.95	—.02
ε Cassiopeæ		—1.12	2.21		46	31.29	+.05
β Arietis		+0.23	1.07		48	35.65	—.05
υ Ceti	E.	+0.87	—1.08		54	51.63	+.07
γ Androm	W.	—0.21	+1.34		56	11.08	+.12
α Arietis		+0.18	1.09	2	01	00.59	+.13
67 Ceti		+0.64	1.01		11	32.23	+.05
ξ Ceti		+0.42	1.01		22	20.79	—.10
36 H. Cassiopeæ		—2.10	3.30		27	38.06	—.07
ν Arietis	W.	+0.21	+1.08		32	36.33	—.11

Normal equation, $11\Delta t — 0.08a_e — 0.86a + 1.96c + 26^s.13 = 0$

Adopted $a_w = -0^s.36$ $a_e = -0^s.24$ $c = —0^s.07$

Chronometer fast $2^s.39$ at $2^h.03$

TABLE III.—*Details of time work*—Continued.

[Cisco, Texas, December 11, 1889. Before signals. Observer, Woodward.]

Name of star.	Clamp.	*A*	*C*	*t*			*v*
				h.	*m.*	*s.*	*s.*
β Cassiopeæ	W.	−0.84	+1.92	0	03	20.69	+.07
γ Pegasi		+0.32	1.03		07	36.33	−.04
ι Ceti		+0.68	1.01		13	51.68	+.06
12 Ceti		+0.61	1.00		24	27.75	.00
ζ Cassiopeæ	W.	−0.59	+1.67		30	52.81	−.09
α Cassiopeæ	E.	−0.70	−1.78		34	18.27	+.01
β Ceti		+0.82	1.06		38	06.64	−.01
ζ Androm		+0.17	1.09		41	32.82	+.01
ε Piscium		+0.43	1.01		57	16.52	−.02
β Androm	E.	−0.05	−1.22	1	03	36.87	+.03

Normal equation, $10\Delta t+0.18a_w+0.67a_e+0.47c+30^s.55=0$

Adopted $a_w=-0^s.24$ $a_e=-0^s.36$ $c=+0^s.04$

Chronometer fast $3^s.63$ at $0^h.58$.

[Cisco, Texas, December 11, 1889. After signals. Observer, Woodward.]

Name of star.	Clamp.	*A*	*C*	*t*			*v*
				h.	*m.*	*s.*	*s.*
ε Cassiopeæ	E.	−1.12	−2.21	1	46	32.09	−.02
ν Arietis		+0.21	1.07	2	32	37.31	−.05
θ Persei	E.	−0.41	−1.52		36	44.50	+.10
η Persei	W.	−0.68	+1.76		42	43.41	−.02

Normal equation, $4\Delta t-2.00a-3.04c+12^s.33=0$

Adopted $a_w=-0^s.50$ $a_e=-0^s.50$ $c=+0^s.08$

Chronometer fast $3^s.27$ at $2^h.41$.

TABLE III.—*Details of time work*—Continued.

[Sierra Blanca, Texas, May 16, 1890. Before signals. Observer, Woodward.]

Name of star.	Clamp.	*A*	*C*	*t*			*v*
				h.	*m.*	*s.*	*s.*
ν Hydræ	W.	+0.76	+1.04	10	44	20.23	−.01
46 Leonis		−0.08	1.22		49	20.24	+.03
β Urs. Maj		−0.80	1.83		57	24.79	+.02
ψ Urs. Maj		−0.34	1.42	11	05	40.19	−.00
δ Leonis	W.	+0.19	+1.07		08	25.49	−.08
υ Urs. Maj	E.	−0.05	−1.20		11	43.35	+.12
λ Draconis		−1.82	2.92		25	08.58	−.09
κ Urs. Maj		−0.45	1.51		40	26.55	−.17
β Leonis		+0.28	1.04		43	37.05	+.02
β Virginis	E.	+0.48	−1.00		45	07.63	+.13

Normal equation, $10\Delta t-1.83a-1.09c+105^{s}.31=0$

Adopted $a=+2^{s}.49$ $c=+0^{s}.067$

Chronometer fast $10^{s}.07$ at $11^{h}.25$.

[Sierra Blanca, Texas, May 16, 1890. After signals. Observer, Woodward.]

Name of star.	Clamp.	*A*	*C*	*t*			*v*
				h.	*m.*	*s.*	*s.*
δ Corvi	E.	+0.76	−1.04	12	24	19.68	+.04
8 Can. Ven		−0.25	1.34		28	42.95	−.09
γ Virginis		+0.53	1.00		36	14.95	−.06
31 Comæ Ber		+0.06	1.13		46	31.67	+.05
ε Urs. Maj	E.	−0.78	−1.81		49	24.99	+.04
ε Virginis	W.	+0.34	+1.02		56	52.34	−.03
θ Virginis		+0.59	1.00	13	04	25.01	+.03
γ Hydræ		+0.87	1.08		13	05.59	−.02
ζ Urs. Maj		−0.73	1.77		19	43.47	+.11
69 H. Urs. Maj	W.	−1.00	+2.03		24	39.32	−.11

Normal equation, $10\Delta t+0.39a+0.58c+99^{s}.86=0$

Adopted $a_{w}=a_{e}=+2^{s}.26$ $c=+0^{s}.02$

Chronometer fast $10^{s}.08$ at $12^{h}.91$.

TABLE III.—*Details of time work*—Continued.

[St. Louis, Missouri, May 25, 1890. Before signals. Observer, Woodward.]

Name of star.	Clamp.	A	C	t	v
				h. m. s.	s.
β Urs. Maj	W.	−0.80	+1.83	10 55 30.45	−.04
ψ Urs. Maj		−0.34	1.42	11 03 46.92	+.02
δ Leonis		+0.19	1.07	08 33.42	−.01
δ Crateris		+0.73	1.03	14 08.15	−.07
σ Leonis	W.	+0.42	+1.01	15 45.80	+.07
τ Leonis	E.	+0.47	−1.00	22 34.43	+.09
υ Leonis		+0.52	1.00	31 36.48	−.08
χ Urs. Maj		−0.45	1.51	40 32.14	−.09
β Leonis		+0.28	1.04	43 44.56	.00
γ Urs. Maj	E.	−0.67	−1.71	48 20.57	+.07

Normal equation, $10\Delta t+0.20a_w+0.15a_e+0.10c+73^s.05=0$

Adopted $a_w=+0^s.21$ $a_e=0^s.00$ $c=-0^s.227$

Chronometer fast $17^s.31$ at $11^h.38$.

[St. Louis, Missouri, May 25, 1890. After signals. Observer, Woodward.]

Name of star.	Clamp.	A	C	t	v
				h. m. s.	s.
ε Virginis	E.	+0.34	−1.02	12 57 00.09	+.01
θ Virginis		+0.59	1.00	13 04 33.16	−.04
43 Comæ		+0.05	1.14	07 02.69	+.07
20 Can. Ven		−0.23	1.33	12 55.04	+.01
ζ Urs. Maj	E.	−0.73	−1.77	19 48.64	−.01
69 H. Urs. Maj	W.	−1.00	+2.03	24 45.05	+.01
ζ Virginis		+0.52	1.00	29 23.87	+.05
m Virginis		+0.64	1.01	36 08.88	−.02
τ Bootis		+0.24	1.05	42 20.80	−.05
η Urs. Maj	W.	−0.50	+1.55	43 31.06	−.02

Normal equation, $10\Delta t-0.10a_w+0.02a_e+0.38c+73^s.92=0$

Adopted $a_w=+0^s.23$ $a_e=+0^s.23$ $c=-0^s.236$

Chronometer fast $17^s.38$ at $12^h.36$.

TABLE III.—*Details of time work*—Continued.

[Sierra Blanca, Texas, May 28, 1890. Before signals. Observer, Woodward.]

Name of star.	Clamp.	A	C	t			v
				h.	*m.*	*s.*	*s.*
β Urs. Maj	E.	−0.80	−1.83	10	55	30.69	+.01
ψ Urs. Maj		−0.34	1.42	11	03	47.51	−.01
δ Leonis		+0.19	1.07		08	34.52	+.04
δ Crateris		+0.73	1.03		14	09.52	−.09
σ Leonis	E.	+0.42	−1.01		15	47.04	+.08
υ Leonis	W.	+0.52	+1.00		31	38.31	−.04
χ Urs. Maj		−0.45	1.51		40	33.81	−.04
β Leonis		+0.28	1.04		43	46.32	+.04
β Virginis		+0.48	1.00		45	17.36	+.01
γ Urs. Maj	W.	−0.67	+1.71		48	22.13	+.05

Normal equation, $10\Delta t+0.16a_w+0.20a_e-0.10c+6^s.56=0$

Adopted $a_w=-0^s.32$ $a_e=-0^s.39$ $c=-0^s.09$

Chronometer fast $18^s.64$ at $11^h.41$.

[Sierra Blanca, Texas, May 28, 1890. After signals. Observer, Woodward.]

Name of star.	Clamp.	A	C	t			v
				h.	*m.*	*s.*	*s.*
δ Virginis	W.	+0.46	+1.00	12	50	23.45	+.05
ε Virginis		+0.34	1.02		56	01.79	−.02
θ Virginis		+0.59	1.00	13	04	34.94	−.06
20 Can. Ven		−0.23	1.33		12	56.75	+.02
ζ Urs. Maj	W.	−0.73	+1.77		19	50.33	−.01
69 H. Urs. Maj	E.	−1.00	−2.03		24	45.43	+.11
ζ Virginis		+0.52	1.00		29	25.08	+.08
m Virginis		+0.64	1.01		36	10.03	−.08
τ Bootis		+0.24	1.05		42	21.91	.00
η Urs. Maj	E.	−0.50	−1.55		43	32.48	−.12

Normal equation, $10\Delta t+0.43a_w-0.10a_e-0.52c+7^s.10=0$

Adopted $a_w=0^s.00$ $a_e=-0^s.10$ $c=-0^s.09$

Chronometer fast $18^s.72$ at $13^h.33$.

TABLE III.—*Details of time work*—Continued.

[Sierra Blanca, Texas, May 29, 1890. Before signals. Observer, Woodward.]

Name of star.	Clamp.	A	C	t	v
				h. *m.* *s.*	*s.*
δ Crateris	W.	+0.73	+1.03	11 14 10.07	.00
υ Leonis		+0.52	1.00	31 38.66	—.04
3 Draconis		—1.53	2.60	36 39.69	—.01
χ Urs. Maj		−0.45	1.51	40 34.15	+.02
β Leonis	W.	+0.28	+1.04	43 46.70	+.06
γ Urs. Maj	E.	—0.67	−1.71	48 23.07	+.10
π Virginis		+0.41	1.01	55 34.34	.00
ο Virginis		+0.38	1.01	59 56.55	.00
δ Urs. Maj		—0.83	1.87	12 10 19.40	—.12
η Virginis	E.	+0.52	—1.00	14 36.93	—.03

Normal equation, $10\Delta t-0.45a_w-0.19a_e+0.58c+2^s.82=0$

Adopted $a_w=-0^s.253$ $a_e=-0^s.209$ $c=+0^s.181$

Chronometer fast $19^s.31$ at $11^h.79$.

[Sierra Blanca, Texas, May 29, 1890. After signals. Observer, Woodward.]

Name of star.	Clamp.	A	C	t	v
				h. *m.* *s.*	*s.*
ε Virginis	E.	+0.34	—1.02	12 56 62.66	+.06
θ Virginis		+0.59	1.00	13 04 35.79	—.01
43 Comæ		+0.05	1.14	07 05.04	—.04
20 Can. Ven		—0.23	1.33	12 57.35	—.13
ζ Urs. Maj	E.	—0.73	—1.77	19 51.20	+.14
69 H. Urs. Maj	W.	−1.00	+2.03	24 46.13	+.13
ζ Virginis		+0.52	1.00	29 25.66	+.06
m Virginis		+0.64	1.01	36 10.61	—.10
τ Bootis		+0.24	1.05	42 22.58	+.04
η Urs. Maj	W.	—0.50	+1.55	43 33.14	—.13

Normal equation, $10\Delta t-0.10a_w+0.02a_e+0.38c+4^s.26=0$

Adopted $a_w=0^s.00$ $a_e=-0^s.08$ $c=+0^s.141$

Chronometer fast $19^s.43$ at $13^h.36$

TABLE III.—*Details of time work*—Continued.

[St. Louis, Missouri, October 27, 1889. Before signals. Observer, Pritchett.]

Name of star.	Clamp.	A	C	t			v
				h.	*m.*	*s.*	*s.*
α Aquarii	W.	+0.637	+1.000	22	06	36.28	+.03
ι Pegasi		+0.263	1.102		08	22.44	+.09
π Pegasi		+0.125	1.187		11	35.32	—.08
24 Cephei		—1.750	3.200		14	15.52	—.03
θ Aquarii	W.	+0.739	+1.011		17	29.86	+.02
π Aquarii	E.	+0.614	—1.000		26	07.46	—.02
η Aquarii		+0.634	1.000		36	10.14	.00
31 Cephei		—1.941	3.434		39	36.01	+.03
η Pegasi		+0.180	1.150		44	19.35	—.11
μ Pegasi	E.	+0.276	—1.095		51	10.29	+.10

Normal equation, $10\Delta t+0.004a_w-0.237a_e-0.179c-99^s.30=0$

Adopted $a_w=-1^s.214$ $a_e=-1^s.102$ $c=+0^s.262$

Clock fast $389^s.91$ at $22^h.32$.

[St. Louis, Missouri, October 27, 1889. After signals. Observer, Pritchett.]

Name of star.	Clamp.	A	C	t			v
				h.	*m.*	*s.*	*s.*
τ Pegasi	E.	+0.291	—1.087	23	21	40.24	—.02
κ Piscium		+0.617	1.000		27	45.74	—.12
70 Pegasi	E.	+0.456	—1.023		30	04.08	+.11
41 H. Cephei	W.	—1.233	+2.580		49	12.52	—.06
φ Pegasi		+0.363	1.055		58	22.94	+.12
ω Piscium		+0.539	1.006	0	00	08.83	+.04
ν Pegasi	W.	+0.423	+1.033		14	03.49	—.07

Normal equation, $7\Delta t+0.92a_w+1.364a_e+2.564c-69^s.67=0$

Adopted $a_w=-1^s.264$ $a_e=-1^s.041$ $c=+0^s.338$

Clock fast $390^s.05$ at $23^h.67$.

TABLE III.—*Details of time work*—Continued.

[St. Louis, Missouri, October 28, 1889. Before signals. Observer, Pritchett.]

Name of star.	Clamp.	A	C	t			v
				h.	m.	s.	s.
α Aquarii	W.	+0.64	+1.00	22	06	38.22	+.06
ι Pegasi		+0.26	1.10		08	24.40	+.14
π Pegasi		+0.12	1.19		11	37.20	—.10
24 Cephei		—1.75	3.20		14	17.39	—.03
θ Aquarii	W.	+0.74	+1.01		17	31.71	—.07
π Aquarii	E.	+0.61	—1.00		26	09.40	—.03
η Aquarii		+0.63	1.00		36	11.99	—.09
31 Cephei		—1.94	3.43		39	37.75	+.03
η Pegasi		+0.18	1.15		44	21.50	+.13
μ Pegasi	E.	+0.28	—1.09		51	12.09	—.03

Normal equation, $10\Delta t+0.01a_w-0.24a_e-0.17c-18^s.48=0$

Adopted $a_w=-1^s.22$ $a_e=-1^s.04$ $c=+0^s.26$

Clock fast $391^s.83$ at $22^h.32$.

[St. Louis, Missouri, October 28, 1889. After signals. Observer, Pritchett.]

Name of star.	Clamp.	A	C	t			v
				h.	m.	s.	s.
π Cephei	E.	—2.25	—3.81	23	10	59.72	+.03
τ Pegasi		+0.29	1.09		21	42.33	+.06
κ Piscium		+0.62	1.00		27	47.85	+.02
70 Pegasi		+0.46	1.02		30	05.96	+.02
ι Androm	E.	—0.09	—1.36		39	15.82	—.14
41 Cephei	W.	—1.23	+2.58		49	14.40	+.03
φ Pegasi		+0.36	1.05		53	24.99	+.18
ω Piscium		+0.54	1.01	0	00	10.83	+.06
22 Androm		—0.17	1.42		11	08.60	—.09
υ Pegasi	W.	+0.42	+1.03		14	05.38	—.17

Normal equation, $10\Delta t-0.08a_w-0.97a_e-1.19c-21^s.42=0$

Adopted $a_w=-1^s.20$ $a_e=-1^s.16$ $c=+0^s.30$

Clock fast $392^s.06$ at $23^h.62$.

TABLE III.—*Details of time work*—Continued.

[St. Louis, Missouri, November 2, 1889. Before signals. Observer, Pritchett.]

Name of star.	Clamp.	A	C	t			v
				h.	m.	s.	s.
σ Aquarii	E.	+0.78	−1.02	22	31	28.02	+.20
η Aquarii		+0.63	1.00		36	20.68	−.13
31 Cephei		−1.94	3.43		39	45.72	−.07
λ Pegasi	E.	+0.29	−1.08		47	53.06	−.01
μ Pegasi	W.	+0.28	+1.09		51	21.25	−.12
β Pegasi		+0.22	1.13	23	05	06.49	+.10
π Cephei		−2.25	3.81		11	10.18	+.09
φ Aquarii		+0.71	1.01		15	16.60	−.07
τ Pegasi		+0.29	1.09		21	51.38	+.02
κ Piscium	W.	+0.62	+1.00		27	36.87	−.01

Normal equation, $10\Delta t-0.13a_w-0.24a_e+2.60c-6^s.72=0$

Adopted $a_w=-1^s.14$ $a_e=-0^s.92$ $c=+0^s.29$

Clock fast $400^s.56$ at $22^h.87$.

[St. Louis, Missouri, November 2, 1889. After signals. Observer, Pritchett.]

Name of star.	Clamp.	A	C	t			v
				h.	m.	s.	s.
κ Androm	W.	−0.12	+1.38	23	41	40.09	−.17
41 H. Cephei		−1.23	2.58		49	22.89	+.05
ϕ Pegasi		+0.36	1.06		53	33.25	−.03
ω Piscium	W.	+0.54	+1.01	24	00	19.37	+.13
ι Ceti	E.	+0.75	−1.01		20	28.31	−.01
44 Piscium		+0.61	1.00		26	25.03	+.10
12 Ceti		+0.69	1.00		31	04.58	+.03
π Androm		+0.12	1.19		37	40.09	−.02
δ Androm		+0.17	1.16		40	06.41	−.08
21 Cass	E.	−2.17	−3.71		45	07.62	+.01

Normal equation, $10\Delta t-0.45a_w+0.17a_e-3.04c-5^s.89=0$

Adopted $a_w=-1^s.29$ $a_e=-1^s.06$ $c=+0^s.26$

Clock fast $400^s.63$ at $24^h.18$.

TABLE III.—*Details of time work*—Continued.

[St. Louis, Missouri, November 15, 1889. Before signals. Observer, Pritchett.]

Name of star.	Clamp.	A	C	t			v
				h.	*m.*	*s.*	*s.*
ι Piscium	E.	+0.56	−1.00	23	34	01.32	+.04
41 H. Cephei		−1.23	2.58		42	25.64	.00
φ Pegasi		+0.36	1.06		46	37.64	.00
ω Piscium		+0.54	1.01		53	23.80	−.11
β Cassiopeæ		−0.65	1.92	0	03	04.24	+.06
σ Androm	E.	+0 06	−1.24		12	19.59	+.01
π Androm	W.	+0.12	+1.19		30	45.76	−.10
δ Androm		+0.17	1.16		33	11.84	+.17
21 Cassiopeæ		−2.16	3.71		38	14.13	−.06
ζ Androm		+0.28	1.09		41	15.49	+.04
δ Piscium		+0.53	1.01		42	43.27	−.04
ε Piscium	W.	+0.52	+1.01		56	58.85	−.02

Normal equation, $12\Delta t - 0.90a + 0.36c + 51^s.85 = 0$

Adopted $a_w = -1^s.04$ $a_e = -1^s.04$ $c = +0^s.28$

Clock slow $14^s.41$ at $24^h.27$.

[St. Louis, Missouri, November 15, 1889. After signals. Observer, Pritchett.]

Name of star.	Clamp.	A	C	t			v
				h.	*m.*	*s.*	*s.*
ν Piscium	W.	+0.56	+1.00	1	35	27.19	+.07
ο Piscium		+0.51	1.01		39	20.13	−.15
ε Cassiopeæ	W.	−0.92	+2.21		46	17.30	+.07
α Arietis	E.	+0.29	−1.09	2	00	43.03	−.08
β Trianguli		+0.09	1.21		02	44.79	−.01
ξ² Ceti		+0.51	1.01		06	54.53	+.08
ι Cassiopeæ	E.	−1.21	−2.55		19	47.32	+.01

Normal equation, $7\Delta t + 0.15a_w - 0.32a_e - 1.64c + 100^s.85 = 0$

Adopted $a_w = -1^s.37$ $a_e = -1^s.03$ $c = +0^s.37$

Clock slow $14^s.34$ at $1^h.98$.

TABLE III.—*Details of time work*—Continued.

[St. Louis, Missouri, November 23, 1889. Before signals. Observer, Pritchett.]

Name of star.	Clamp.	A	C	t			v
				h.	m.	s.	s.
ω Piscium	W.	+0.54	+1.01	23	53	24.33	+.10
α Androm		+0.20	1.14	0	02	27.33	−.04
γ Pegasi		+0.42	1.03		07	19.15	+.04
ν Androm		+0.06	1.24		12	20.45	−.06
44 Piscium		+0.61	1.00		19	30.57	−.02
κ Cassiopeæ		−0.86	2.15		26	32.44	−.07
ζ Cassiopeæ	W.	−0.42	+1.68		30	37.08	+.07
δ Androm	E.	+0.17	−1.16		33	11.32	+.11
21 Cassiopeæ		−2.16	3.72		38	11.96	−.02
ζ Androm		+0.28	1.09		41	15.01	−.03
δ Piscium		+0.53	1.01		42	42.80	−.07
μ Androm		+0.01	1.27		50	23.92	−.02
ε Piscium	E.	+0.52	−1.01		56	58.27	+.03

Normal equation, $13\Delta t+0\ 55a_w—0.65a_e-0.01c+184^s.82=0$

Adopted $a_w=-0^s.95$ $a_e=-1^s.15$ $c=+0^s.30$

Clock slow $14^s.23$ at $24^h.46$.

[St. Louis, Missouri, November 23, 1889. After signals. Observer, Pritchett.]

Name of star.	Clamp.	A	C	t			v
				h.	m.	s.	s.
γ Piscium	E.	+0.56	−1.00	1	35	26.88	+.04
ο Piscium		+0.51	1.01		39	19.72	−.12
ν Arietis		+0.36	1.06		47	14.56	−.20
50 Cassiopeæ		−1.77	3.21		53	51.21	−.06
ν Androm		−0.07	1.34		56	53.89	+.28
α Arietis	E.	+0.30	−1.08	2	00	43.11	+.06
β Trianguli	W.	+0.08	+1.21		02	45.67	+.05
γ Trianguli		+0.11	1.20		10	32.25	+.03
ι Cassiopeæ		−1.21	2.55		19	49.29	−.01
ξ² Ceti		+0.52	1.01		22	03.91	−.13
δ Ceti		+0.63	1.00		33	35.75	+.02
γ Ceti	W.	+0.59	+1.00		37	21.16	+.04

Normal equation, $12\Delta t-0.11a_e+0.72a_w-0.73c+51^s.16=0$

Adopted $a_w=-1^s.19$ $a_e=-1^s.11$ $c=+0^s.28$

Clock slow $14^s.18$ at $2^h.08$.

TABLE III.—*Details of time work*—Continued.

[St. Louis, Missouri, November 25, 1889. After signals. Observer, Pritchett]

Name of star.	Clamp.	*A*	*C*	*t*	*v*
				h. m. s.	s.
δ Ceti	W.	+0.63	+1.00	2 33 35.57	+.07
γ Ceti		+0.59	1.00	37 21.11	—.05
μ Ceti		+0.49	1.01	38 44.85	—.04
41 Arietis		+0.23	1.12	43 16.05	—.02
48 H. Cephei		—2.85	4.56	3 06 15.84	.00
ζ Arietis	W.	+0.33	+1.07	08 20.05	+.04
o Tauri	E.	+0.51	—1.01	18 38.05	+.13
2 H. Camelop		—0.71	1.97	19 56.12	+.03
f Tauri		+0.45	1.02	24 32.73	—.14
5 H. Camelop		—1.64	3.07	38 33.13	—.03
η Tauri		+0.28	1.09	40 41.57	—.05
γ Tauri	E.	+0.55	—1.01	57 02.77	+.07

Normal equation, $12\Delta t - 0.58a_w - 0.56a_e + 0.59c + 50^s.28 = 0$

Adopted $a_w = -1^s.23$ $a_e = -1^s.22$ $c = +0^s.32$

Clock slow $14^s.32$ at $3^h.18$.

[St. Louis, Missouri, December 8, 1889. Before signals. Observer, Pritchett.]

Name of star.	Clamp.[1]	*A*	*C*	*t*	*v*
				h. m. s.	s.
44 Piscium	E.	+0.61	—1.00	0 19 28.43	+.06
12 Ceti		+0.69	1.00	24 08.08	+.05
π Androm		+0.12	1.19	30 43.73	—.07
δ Androm		+0.17	1.16	33 10.08	—.02
21 Cassiopeæ	E.	—2.16	—3.73	38 09.86	—.01
ε Piscium	W.	+0.52	+1.01	56 57.42	+.12
β Androm		+0.08	1.22	1 03 18.64	—.06
π Piscium		+0.46	1.02	30 59.72	+.01
γ Piscium		+0.56	1.00	35 26.01	+.02
o Piscium	W.	+0.51	+1.01	39 18.87	—.09

Normal equation, $10\Delta t + 2.13a_w - 0.57a_e - 2.82c + 157^s.44 = 0$

Adopted $a_w = -1^s.08$ $a_e = -1^s.08$ $c = +0^s.26$

Clock slow $15^s.50$ at $0^h.92$.

TABLE III.—*Details of time work*—Continued.

[St. Louis, Missouri, December 8, 1889. After signals. Observer, Pritchett.]

Name of star.	Clamp.	A	C	t	v
				h. m. s.	s.
δ Ceti	W.	+0.63	+1.00	2 33 34.46	+.11
γ Ceti		+0.59	1.00	37 19.98	.00
μ Ceti		+0.49	1.01	38 43.67	+.06
41 Arietis		+0.23	1.12	43 14.84	+.04
47 H. Cephei		−3.39	5.24	51 21.70	−.09
o Persei	W.	+0.01	+1.28	57 52.55	−.12
48 Cephei	E.	−2.85	−4.56	3 06 11.49	+.07
ζ Arietis		+0.33	1.07	08 18.39	−.04
o Tauri		+0.51	1.01	18 37.01	+.10
ξ Tauri		+0.50	1.01	21 55.84	+.10
f Tauri		+0.45	1.02	24 31.51	+.02
17 Tauri		+0.28	1.10	38 04.40	−.06
ζ Tauri	E.	+0.28	−1.09	40 40.64	−.18

Normal equation, $13\Delta t-1.44a_w-0.50a_e-0.21c+199^s.26=0$

Adopted $a_w=-1^s.04$ $a_e=-1^s.17$ $c=+0^s.29$

Clock slow $15^s.48$ at $3^h.08$.

[St. Louis, Missouri, December 10, 1889. Before signals. Observer, Pritchett.]

Name of star.	Clamp.	A	C	t	v
				h. m. s.	s.
κ Piscium	E.	−0.86	−2.15	0 26 29.34	+.04
π Androm		+0.12	1.19	30 43.64	−.07
δ Androm		+0.17	1.16	33 09.88	+.09
ζ Androm		+0.28	1.09	41 18.62	−.06
γ Cassiopeæ		−0.74	2.01	49 48.67	−.03
ε Piscium	E.	+0.52	−1.01	56 56.91	+.04
β Androm	W.	+0.08	+1.22	1 03 18.68	−.05
τ Piscium		+0.18	1.15	05 20.25	−.01
η Piscium		+0.42	1.03	25 19.68	−.04
40 Cassiopeæ		−1.85	3.32	29 32.23	.00
ν Piscium		+0.56	1.00	35 26.02	+.12
α Trianguli	W.	+0.19	+1.14	46 32.93	−.02

Normal equation, $12\Delta t-0.42a_w-0.51a_e+0.25c+184^s.74=0$

Adopted $a_w=-1^s.08$ $a_e=-1^s.09$ $c=+0^s.32$

Clock slow $15^s.49$ at $1^h.04$.

TABLE III.—*Details of time work*—Continued.

[St. Louis, Missouri, December 10, 1889. After signals. Observer, Pritchett.]

Name of star.	Clamp.	*A*	*C*	*t*	*v*
				h. m. s.	*s.*
ξ¹ Ceti	W.	+0.51	+1.01	2 06 54.07	+.02
γ Trianguli		+0.11	1.20	10 30.95	+.01
θ Arietis		+0.35	1.06	11 44.54	—.02
ξ² Ceti		+0.52	1.01	22 02.53	+.02
ν Arietis	W.	+0.32	+1.07	32 18.44	—.03
41 Arietis	E.	+0.23	—1.12	43 14.34	+.01
σ Arietis		+0.42	1.03	45 08.83	—.03
δ Arietis		+0.35	1.06	3 05 04.05	+.02
ζ Arietis		+0.33	1.07	08 18.53	—.02
ε Tauri	E.	+0.51	—1.01	18 37.21	+.04

Normal equation, $10\Delta t+1.81a_w+1.84a_e+0\ 06c+158^s.07=0$

Adopted $a_w=-1^s.12$ $a_e=-1^s.09$ $c=+0^s.25$

Clock slow $15^s.40$ at $2^h.64$.

[St. Louis, Missouri, December 11, 1889. Before signals. Observer, Pritchett.]

Name of star.	Clamp.	*A*	*C*	*t*	*v*
				h. m. s.	*s.*
43 H. Cephei	E.	—9.68	—13.23	0 53 44.92	—.11
ε Piscium		+0.52	1.01	56 56.78	+.13
β Androm		+0.08	1.22	1 03 17.76	+.09
τ Piscium		+0.18	1.15	05 19.54	—.05
ƒ Piscium		+0.58	1.00	11 50.32	+.03
ν Piscium	E.	+0.23	—1.12	13 08.59	—.08
η Piscium	W.	+0.42	+1.03	25 19.56	.00
40 Cassiopeæ		—1.85	3.32	29 32.07	+.02
ν Piscium		+0.56	1.00	35 26.03	+.05
ο Piscium		+0.51	1.01	39 18.87	—.10
α Trianguli		+0.19	1.14	46 32.85	+.01
β Arietis	W.	+0.34	+1.07	48 17.74	+.01

Normal equation, $12\Delta t-0.17a_w-8.09a_e-10.16c+180^s.01=0$

Adopted $a_w=-1^s.09$ $a_e=-1^s.15$ $c=+0^s.30$

Clock slow $15^s.51$ at $1^h.32$.

TABLE III.—*Details of time work*—Continued.

[St. Louis, Missouri, December 11, 1889. After signals. Observer, Pritchett.]

Name of star.	Clamp.	*A*	*C*	*t*			*v*
				h.	*m.*	*s.*	*s.*
γ Triangui	W.	+0.11	+1.20	2	10	30.97	−.12
ξ2 Ceti		+0.51	1.01		22	02.41	+.10
36 H. Cass		−1.83	3.30		27	23.29	−.03
υ Arietis		+0.32	1.07		32	18.45	−.13
δ Ceti	W.	+0.63	+1.00		33	34.36	+.17
41 Arietis	E.	+0.23	−1.12		43	14.00	+.10
σ Arietis		+0.42	1.08		45	06.77	−.19
47 H. Cephei		−3.39	5.24		51	18.81	+.01
δ Arietis		+0.35	1.06	3	05	03.77	+.07
ζ Arietis		+0.33	1.07		08	18.43	−.16
ο Tauri	E.	+0.51	−1.01		18	36.86	+.18

Normal equation, $11\Delta t-0.26a_{w}-1.55a_{e}-2.95c+170^{s}.61=0$

Adopted $a_{w}=-0^{s}.90$ $a_{e}=-1^{s}.05$ $c=+0^{s}.29$

Clock slow $15^{s}.60$ at $2^{h}.64$.

[St. Louis, Missouri, December 18, 1889. First series. Observer, Pritchett.]

Name of star.	Clamp.	*A*	*C*	*t*			*v*
				h.	*m.*	*s.*	*s.*
ω Piscium	E.	+0.54	− 1.01	23	53	22.42	+.01
33 Piscium		+0.71	1.01		58	24.81	+.02
β Cassiopeæ		−0.65	1.92	0	3	02.25	−.04
γ Pegasi		+0.42	1.03		7	17.11	+.01
σ Androm		+0.06	1.24		12	18.07	.00
44 Piscium		+0.61	1.00		19	28.61	−.07
ζ Cassiopeæ		−0.42	1.68		30	34.26	+.04
δ Androm		+0.17	1.16		33	09.90	+.04
ζ Androm		+0.28	1.09		41	13.60	.00
δ Piscium		+0.53	1.01		42	41.41	+.02
γ Cassiopeæ	E.	−0.74	−2.01		49	48.39	−.02
43 H. Cephei	W.	−9.64	+13.18		53	46.67	−.01
f Piscium		+0.58	1.00	1	11	50.87	−.02
ν Piscium		+0.23	1.12		13	09.00	−.05
δ Cassiopeæ		−0.71	1.98		18	22.41	+.02
η Piscium		+0.42	1.03		25	19.36	+.03
π Piscium	W.	+0.46	+ 1.02		30	50.55	+.04

Normal equation, $17\Delta t-8.66a_{w}+1.51a_{e}+5.17c-257^{s}.68=0$

Adopted $a_{w}=+0^{s}.89$ $a=+0^{s}.82$ $c=-0^{s}.18$

Clock slow $15^{s}.50$ at $24^{h}.83$.

TABLE III.—*Details of time work*—Continued.

[St. Louis, Missouri, December 18, 1889. Second series. Observer, Pritchett.]

Name of star.	Clamp.	*A*	*C*	*t*	*v*
				h. m. s.	s.
γ Eridani	W.	+0.67	+1.00	4 30 33.38	+.01
Gr. 848		—2.45	4.06	33 52.05	+.21
4 Camelop		—0.56	1.81	38 36.13	+.05
ι Tauri		+0.36	1.06	44 40.66	—.03
π^5 Orionis		+0.59	1.00	48 15.38	+.05
ε Aurigæ		—0.12	1.38	53 49.37	+.10
ι Tauri	W.	+0.32	+1.07	56 15.53	+.02
17 Camelop	E.	—0.91	—2.20	5 19 32.50	—.21
ζ Tauri		+0.32	1.07	30 48.12	.00
ο Aurigæ		—0.30	1.55	38 07.26	—.01
θ Aurigæ		+0.03	1.26	51 57.60	—.15
66 Orionis		+0.57	1.00	58 53.32	+.11
ν Orionis		+0.42	1.03	6 01 01.31	+.01
22 H. Camelop	E.	—1.45	—2.84	06 29.70	—.08

Normal equation, $14\Delta t - 1.19a_w - 1.32a_e + 0.43c - 217^s.21 = 0$

Adopted $a_w = +0^s.93$ $a_e = +0^s.84$ $c = -0^s.24$

Clock slow $15^s.68$ at $5^h.26$.

[St. Louis, Missouri, December 19, 1889. First series. Observer, Pritchett.]

Name of star.	Clamp.	*A*	*C*	*t*	*v*
				h. m. s.	s.
η Piscium	E.	+0.42	—1.03	1 25 19.08	+.02
40 Cassiopeæ		—1.85	3.32	29 29.70	—.14
43 Cassiopeæ		—1.26	2.61	33 56.95	—.05
ο Piscium		+0.51	1.01	39 18.35	.00
ε Cassiopeæ		—0.92	2.21	46 13.74	+.07
ξ Piscium		+0.59	1.00	47 34.90	+.02
50 Cassiopeæ		—1.76	3.22	53 48.77	—.06
α Arietis		+0.29	1.09	2 00 41.86	+.05
β Trianguli		+0.09	1.21	02 43.59	+.10
ξ^1 Ceti	E.	+0.51	—1.01	06 53.53	+.10
ι Cassiopeæ	W.	—1.21	+2.55	19 46.95	—.29
ξ^2 Ceti		+0.52	1.01	23 02.41	+.01
36 H. Cassiopeæ		—1.83	3.30	27 22.69	+.34
ν Arietis		+0.32	1.08	32 18.32	—.06
γ Ceti		+0.59	1.00	37 19.90	—.05
41 Arietis		+0.23	1.12	43 14.78	—.02
σ Arietis	W.	+0.42	+1.03	45 09.19	—.02

Normal equation, $17\Delta t - 0.96a_w - 3.38a_e - 6.62c - 261^s.20 = 0$

Adopted $a_w = +1^s.02$ $a_e = +0^s.83$ $c = -0^s.21$

Clock slow $15^s.51$ at $2^h.09$.

TABLE III.—*Details of time work*—Continued.

[St. Louis, Missouri, December 19, 1889. Second series. Observer, Pritchett.]

Name of star.	Clamp	*A*	*C*	*t*			*v*
				h.	*m.*	*s.*	*s.*
17 Tauri	W.	+0.28	+1.09	3	39	04.89	—.04
η Tauri		+0.28	1.09		40	41.08	—.09
27 Tauri		+0.28	1.09		42	21.60	—.05
9 H. Camelop		—0.77	2.05		47	31.70	—.01
λ Tauri		+0.46	1.02		54	19.23	+.04
ν Tauri		+0.55	1.00		58	02.31	+.03
o Eridani	W.	+0.72	+1.01	4	06	13.77	+.03
γ Tauri	E.	+0.41	—1.04		13	15.82	+.01
ε Tauri		+0.36	1.06		21	55.48	.00
Eridani		+0.67	1.00		30	33.06	—.03
Gr. 848		—2.45	4.06		33	50.74	+.04
α Camelop		−1.14	2.47		42	52.93	—.01
π^5 Orionis	E.	+0.59	−1.00		48	15.00	+.06

Normal equation, $13\Delta t+1.80a_w-1.56a_e-2.28c-203^s.06=0$

Adopted $a_w=+0^s.98$ $a_e=+0^s.99$ $c=-0^s.19$

Clock slow $15^s.57$ at $4^h.15$.

[St. Louis, Missouri, December 18, 1889. First series. Observer, Woodward.]

Name of star.	Clamp	*A*	*C*	*t*			*v*
				h.	*m.*	*s.*	*s.*
ω Piscium	W.	+0.54	+1.01	23	53	41.02	+.09
33 Piscium		+0.71	1.01		59	43.51	—.06
γ Pegasi		+0.42	1.03	0	07	35.44	—.08
σ Androm		+0.06	1.24		12	36.17	+.03
44 Piscium		+0.61	1.00		19	47.17	+.01
ζ Cassiopeæ		−0.42	1.68		30	51.86	+.03
δ Androm		+0.17	1.16		33	28.05	—.05
δ Piscium		+0.53	1.01		42	59.90	—.05
γ Cassiopeæ	W.	—0.74	+2.01		50	05.52	+.03
43 H. Cephei	E.	−9.64	—13.18		53	51.61	+.06
β Androm		+0.08	1.22	1	03	35.83	—.25
υ Piscium		+0.23	1.12		13	26.90	—.05
δ Cassiopeæ		—0.71	1.98		18	39.13	—.08
η Piscium		+0.42	1.03		25	37.50	—.05
π Piscium		+0.46	1.02		31	18.04	+.16
o Piscium		+0.51	1.01		39	37.14	+.15
ε Cassiopeæ	E.	—0.92	—2.21		46	31.24	+.04

Normal equation, $17\Delta t-7.69a-11.62c+2^s.63=0$

Adopted $a_w=-0^s.33$ $a_e=-0^s.33$ $c=+0^s.09$

Chronometer fast $2^s.24$ at $0^h.83$.

TABLE III.—*Details of time work*—Continued.

[St. Louis, Missouri, December 18, 1889. Second series. Observer, Woodward.]

Name of star.	Clamp.	A	C	t			v
				h.	m.	s.	s.
ν Eridani	E.	+0.67	−1.00	4	30	53.03	.00
Gr. 848		−2.45	4.06		34	07.65	+.09
4 Camelop		−0.56	1.82		38	53.07	−.11
ί Tauri		+0.36	1.05		44	58.84	−.04
ε Aurigæ		−0.12	1.38		54	07.00	−.09
ι Tauri	E.	+0.32	−1.07		56	33.70	−.06
τ Orionis	W.	+0.72	+1.01	5	12	18.55	+.14
17 Camelop		−0.91	2.20		19	49.86	+.05
χ Aurigæ		+0.13	1.18		25	36.48	−.08
ζ Tauri		+0.32	1.07		30	06.68	+.08
o Aurigæ		−0.30	1.55		37	25.27	+.03
θ Aurigæ		+0.03	1.26		52	15.64	.00
66 Orionis	W.	+0.57	+1.00		59	12.20	+.07

Normal equation, $13\Delta t+0.56a_w-1.78a_e-1.11c+29^s.83=0$.

Adopted $a_w=-0^s.10$, $a_e=-0^s.29$, $c=+0^s.065$.

Chronometer fast $2^s.32$ at $5^h.24$.

[St. Louis, Missouri, December 19, 1889. First series. Observer, Woodward.]

Name of star.	Clamp.	A	C	t			v
				h.	m.	s.	s.
η Piscium	W.	+0.42	+1.03	1	25	37.77	+.08
o Piscium		+0.51	1.01		39	37.16	+.12
ε Cassiopeæ		−0.92	2.21		46	31.00	.00
50 Cassiopeæ		−1.76	3.22		54	04.91	−.07
α Arietis		+0.29	1.09	2	01	00.34	−.01
β Trianguli		+0.09	1.21		03	01.86	−.07
ξ¹ Ceti	W.	+0.51	+1.01		07	12.34	+.03
ι Cassiopeæ	E.	−1.21	−2.55		20	03.37	+.33
ξ² Ceti		+0.51	1.01		22	21.07	.00
36 H Cassiopeæ		−1.83	3.30		27	38.15	−.30
ν Arietis		+0.32	1.08		32	36.64	−.01
γ Ceti		+0.59	1.00		37	38.57	−.02
41 Arietis		+0.23	1.12		43	32.90	−.11
σ Arietis	E.	+0.42	−1.03		45	27.84	+.14

Normal equation, $14\Delta t+1.83a-0.31c+35^s.25=0$.

Adopted $a_w=a_e=-0^s.28$, $c=+0^s.13$.

Chronometer fast $2^s.55$ at $2^h.20$.

TABLE III.—*Details of time work*—Continued.

[St. Louis, Missouri, December 19, 1889. Second series. Observer, Woodward.]

Name of star.	Clamp.	*A*	*C*	*t*			*v*
				h.	*m.*	*s.*	*s.*
17 Tauri	E.	+0.28	−1.09	3	38	23.22	—.01
η Tauri		+0.28	1.09		40	59.46	+.09
27 Tauri		+0.28	1.09		42	39.90	—.03
9 H. Camelop		—0.77	2.05		47	48.63	—.10
λ Tauri		+0.46	1.02		54	37.94	+.06
o^1 Eridani	E.	+0.72	—1.01	4	06	32.78	+.06
γ Tauri	W.	+0.41	+1.04		13	34.62	—.02
ε Tauri		+0.36	1.06		22	14.16	—.05
ν Eridani		+0.67	1.00		30	52.18	+.01
Gr. 848		—2.45	4.06		34	05.66	—.29
δ Camelop		—1.14	2.48		43	10.01	+.28
π^5 Orionis	W.	+0.59	+1.00		46	34.13	+.01

Normal equation, $12\Delta t—1.56a_w+1.25a_c+3\ 29c+30^s.30=0$.

Adopted $a_w=—0^s.47$, $a_e=—0^s.22$, $c=+0^s.10$.

Chronometer fast $2^s.58$ at $4^h.17$.

[St. Louis, Missouri, April 29, 1890. Observer, Pritchett.]

Name of star.	Clamp.	*A*	*C*	*t*			*v*
				h.	*m.*	*s.*	*s.*
Gr. 1706	E.	—3.168	—4.957	10	49	40.83	.00
χ Leonis		+0.514	1.010		58	58.34	+.02
ρ Leonis		+0.590	1.001	11	00	55.54	+.02
δ^2 Leonis	E.	+0.322	—1.072		07	52.92	—.05
τ Leonis	W.	+0.577	+1.001		21	54.06	—.03
λ Draconis		—1.515	2.916		23	25.93	+.01
υ Leonis		+0.627	1.000		30	56.36	—.08
χ Urs. Maj		—0.256	1.506		39	50.43	+.11
β Leonis	W.	+0.412	+1.036	11	42	03.98	+.01

Normal equation, $9\Delta t—0.155a_w—1.742a_e—0.581c—25^s.09=0$

Adopted $a_w=—2^s.213$ $a_e=—2^s.271$ $c=+0^s.341$

Clock slow $24^s.33$ at $11^h.28$.

TABLE III.—*Details of time work*—Continued.

[St. Louis, Missouri, May 1, 1890. Observer, Pritchett.]

Name of star.	Clamp.	*A*	*C*	*t*			*v*
				h.	*m.*	*s.*	*s.*
λ Draconis	E.	−1.5150	−2.916	11	24	52.56	+.01
ν Leonis		+0.6213	1.000		30	45.45	−.07
χ Urs. Maj		−0.2551	1.506		39	54.82	−.01
β Virginis		+0.5918	1.001		44	25.06	+.10
π Virginis	E.	+0.5251	−1.008		54	42.84	+.04
o Virginis	W.	+0.4958	+1.013	11	59	05.62	−.02
4 Draconis		−3.1255	4.903	12	07	32.52	−.02
20 Comæ		+0.3165	1.075		23	43.94	−.04
24 Comæ		+0.3566	1.058		29	08.42	+.04
δ Virginis	W.	+0.5698	+1.003	12	49	31.99	−.03

Normal equation, $10\Delta t - 1.3878a_w - 0.0319a_e + 1.621c - 220^s.56 = 0$

Adopted $a_w = +15^s.344$ $a_e = +15^s.370$ $c = -0^s.332$

Clock slow $24^s.29$ at $12^h.00$.

[St. Louis, Missouri, May 2, 1890. Observer, Pritchett.]

Name of star.	Clamp.	*A*	*C*	*t*			*v*
				h.	*m.*	*s.*	*s.*
32² Camelop	W.	−6.827	+9.591	12	48	05.24	+.01
ε Virginis		+0.464	1.021		56	18.88	−.04
θ Virginis		+0.602	1.004	13	03	52.08	−.01
43 Comæ	W.	+0.202	+1.137		06	21.46	+.05
η Urs. Maj	E.	−0.303	−1.552		18	07.57	−.08
η Bootis		+0.356	1.058		48	04.24	+.02
τ Virginis		+0.596	1.001		55	40.48	+.05
α Draconis		−1.044	2.357	14	01	02.46	+.01
d Bootis	E.	+0.250	−1.109		05	00.31	−.01

Normal equation, $9\Delta t - 5.469a_w - 0.145a_e + 5.676c - 38^s.94 = 0$

Adopted $a_w = -0^s.100$ $a_e = -0^s.997$ $c = +0^s.025$

Clock slow $24^s.23$ at $13^h.30$.

TABLE VII.—*Details of time work*—Continued.

[St. Louis, Missouri, May 16, 1890. Before signals. Observer, Pritchett.]

Name of star.	Clamp.	*A*	*C*	*t*			*v*
				h.	*m.*	*s.*	*s.*
π Virginis	W.	+0.53	+1.01	11	54	53.45	+.13
o Virginis		+0.50	1.01		59	15.55	+.03
4 H. Draconis		−3.13	4.90	12	06	44.49	−.01
η Virginis		+0.62	1.00		14	55.90	−.05
6 Can. Ven	W.	−0.02	+1.30		20	05.14	−.11
20 Comæ	E.	+0.32	−1.07	12	23	50.17	+.07
κ Draconis		−1.57	2.98		28	25.32	.00
γ Virginis		+0.64	1.00		35	43.61	−.11
31 Com. Ber		+0.21	1.13		45	58.94	−.07
δ Virginis	E.	+0.57	−1.00	12	49	42.35	+.11

Normal equation, $10\Delta t-1.500a_w+0.170a_e+2.040c-22^s.43=0$

Adopted $a_w=-0^s.503$ $a_e=-0^s.490$ $c=-0^s.435$

Clock slow $22^s.26$ at $12^h.36$.

[St. Louis, Missouri, May 16, 1890. After signals. Observer, Pritchett.]

Name of star.	Clamp.	*A*	*C*	*t*			*v*
				h.	*m.*	*s.*	*s.*
Gr. 2001	E.	−1.93	−3.41	13	22	58.97	+.02
ζ Virginis		+0.62	1.00		28	44.02	+.01
τ Bootis		+0.37	1.05		41	40.84	+.02
η Bootis	E.	+0.36	−1.06		49	05.53	−.04
τ Virginis	W.	+0.60	+1.00	13	55	42.45	−.10
α Draconis		−1.04	2.36	14	01	05.70	−.01
d Bootis		+0.25	1.11		05	02.73	+.06
ι Virginis		+0.70	1.00		09	54.50	−.01
ρ Bootis	W.	+0.16	+1.16	14	26	45.21	+.03

Normal equation, $9\Delta t+0.67a_w-0.58a_e+0.11c-19^s.93=0$

Adopted $a_w=-0^s.460$ $a_e=-0^s.527$ $c=-0^s.410$

Clock slow $22^s.23$ at $13^h.85$.

TABLE III.—*Details of time work*—Continued.

[St. Louis, Missouri, May 25, 1890. Before signals. Observer, Pritchett.]

Name of star.	Clamp.	A	C	t			v
				h.	m.	s.	s.
4 Draconis	E.	—3.126	—4.90	12	06	49.99	+.01
2 Can. Ven	....	—0.062	1.33		10	16.32	—.07
η Virginis	....	+0.624	1.00		13	54.57	+.06
20 Comæ	....	+0.316	1.07		33	50.45	+.04
24 Comæ	E.	+0.355	—1.06		39	15.30	—.03
31 Com. Ber	W.	+0.206	+1.13		45	00.48	—.10
δ Virginis	....	+0.570	1.00		49	42.79	+.05
ε Virginis	....	+0.464	1.02	12	56	21.41	+.02
43 Comæ	....	+0.202	1.14	13	06	24.58	+.05
Gr. 2001	W.	—1.926	+3.41		22	07.84	—.02

Normal equation, $10\Delta t—0.484a_w—1.888a_e—1.66c—4^s.93=0$

Adopted $a_w=+2^s.270$ $a_e=+2^s.394$ $c=—0^s.406$

Clock slow $20^s.99$ at $12^h.63$.

[St. Louis, Missouri, May 25, 1890. After signals. Observer, Pritchett.]

Name of star.	Clamp.	A	C	t			v
				h.	m.	s.	s.
τ Virginis	W.	+0.596	+1.00	13	55	42.15	—.02
α Draconis	....	—1.044	2.36	14	00	09.63	—.01
d Bootis	....	+0.250	1.10		05	03.21	+.01
ρ Bootis	W.	+0.157	+1.17		26	46.00	+.01
ε Bootis	E.	+0.217	—1.13		39	50.44	—.05
109 Virginis	....	+0.592	1.00		40	19.77	+.07
β Urs. Min	....	—2.215	3.77		50	49.25	.00
ψ Bootis	E.	+0.220	—1.13		59	23.41	—.01

Normal equation, $8\Delta t-0.041a_w—1.186a_e—1.40c—5^s.65=0$

Adopted $a_w=+2^s.194$ $a_e=+2^s.395$ $c=—0^s.426$

Clock slow $21^s.00$ at $14^h.45$.

TABLE III.—*Details of time work*—Continued.

[St. Louis, Missouri, May 16, 1890. Before signals. Observer, Pritchett.]

Name of star.	Clamp.	*A*	*C*	*t*			*v*
				h.	*m.*	*s.*	*s.*
π Virginis	W.	+0.53	+1.01	11	54	53.45	+.13
o Virginis		+0.50	1.01		59	15.55	+.03
4 H. Draconis		−3.13	4.90	12	06	44.49	−.01
η Virginis		+0.62	1.00		14	55.90	−.05
6 Can. Ven	W.	−0.02	+1.30		20	05.14	−.11
20 Comæ	E.	+0.32	−1.07	12	23	50.17	+.07
κ Draconis		−1.57	2.98		28	25.32	.00
γ Virginis		+0.64	1.00		35	43.61	−.11
31 Com. Ber		+0.21	1.13		45	58.94	−.07
δ Virginis	E.	+0.57	−1.00	12	49	42.35	+.11

Normal equation, $10\Delta t-1.500a_w+0.170a_e+2.040c-22^s.43=0$

Adopted $a_w=-0^s.503$ $a_e=-0^s.490$ $c=-0^s.435$

Clock slow $22^s.26$ at $12^h.36$.

[St. Louis, Missouri, May 16, 1890. After signals. Observer, Pritchett.]

Name of star.	Clamp.	*A*	*C*	*t*			*v*
				h.	*m.*	*s.*	*s.*
Gr. 2001	E.	−1.93	−3.41	13	22	58.97	+.02
ζ Virginis		+0.62	1.00		28	44.02	+.01
τ Bootis		+0.37	1.05		41	40.84	+.02
η Bootis	E.	+0.36	−1.06		49	05.53	−.04
τ Virginis	W.	+0.60	+1.00	13	55	42.45	−.10
α Draconis		−1.04	2.36	14	01	05.70	−.01
d Bootis		+0.25	1.11		05	02.73	+.08
ι Virginis		+0.70	1.00		09	54.50	−.01
ρ Bootis	W.	+0.16	+1.16	14	26	45.21	+.03

Normal equation, $9\Delta t+0.67a_w-0.58a_e+0.11c-19^s.93=0$

Adopted $a_w=-0^s.460$ $a_e=-0^s.527$ $c=-0^s.410$

Clock slow $22^s.23$ at $13^h.85$.

TABLE III.—*Details of time work*—Continued.

[St. Louis, Missouri, May 25, 1890. Before signals. Observer, Pritchett.]

Name of star.	Clamp.	A	C	t			v
				h.	m.	s.	s.
4 Draconis	E.	—3.126	—4.90	12	06	49.99	+.01
2 Can. Ven		—0.062	1.33		10	16.32	—.07
η Virginis		+0.624	1.00		13	54.57	+.06
20 Comæ		+0.316	1.07		33	50.45	+.04
24 Comæ	E.	+0.355	—1.06		39	15.30	—.03
31 Com. Ber	W.	+0.206	+1.13		45	00.48	—.10
δ Virginis		+0.570	1.00		49	42.79	+.05
ε Virginis		+0.464	1.02	12	56	21.41	+.02
43 Comæ		+0.202	1.14	13	06	24.58	+.05
Gr. 2001	W.	—1.926	+3.41		22	07.84	—.02

Normal equation, $10\Delta t-0.484a_w-1.888a_e-1.66c-4^s.93=0$

Adopted $a_w=+2^s.270$ $a_e=+2^s.394$ $c=-0^s.406$

Clock slow $20^s.99$ at $12^h.63$.

[St. Louis, Missouri, May 25, 1890. After signals. Observer, Pritchett.]

Name of star.	Clamp.	A	C	t			v
				h.	m.	s.	s.
τ Virginis	W.	+0.596	+1.00	13	55	42.15	—.02
α Draconis		—1.044	2.36	14	00	09.63	—.01
d Bootis		+0.250	1.10		05	03.21	+.01
ρ Bootis	W.	+0.157	+1.17		26	46.00	+.01
ε Bootis	E.	+0.217	—1.13		39	50.44	—.05
109 Virginis		+0.592	1.00		40	19.77	+.07
β Urs. Min		—2.215	3.77		50	49.25	.00
ψ Bootis	E.	+0.220	—1.13		59	23.41	—.01

Normal equation, $8\Delta t-0.041a_w-1.186a_e-1.40c-5^s.65=0$

Adopted $a_w=+2^s.194$ $a_e=+2^s.395$ $c=-0^s.426$

Clock slow $21^s.00$ at $14^h.45$.

TABLE III.—*Details of time work*—Continued.

[St. Louis, Missouri, May 28, 1890. Before signals. Observer, Pritchett.]

Name of star.	Clamp.	*A*	*C*	*t*	*v*
				h. m. s.	s
ο Virginis	E.	+0.496	−1.01	11 50 14.24	+.01
4 H. Draconis		−3.126	4.90	12 06 54.36	−.01
2 Can. Ven		−0.062	1.04	10 16.87	−.05
η Virginis	E.	+0.024	−1.33	13 54.19	+.06
20 Comæ	W.	+0.317	+1.07	23 51.52	+.12
κ Draconis		−1.571	2.98	28 35.84	−.01
31 Com. Ber		+0.206	1.13	46 00.72	−.11
δ Virginis		+0.570	1.00	49 42.49	+.04
ε Virginis	W.	+0.464	+1.02	56 21.22	−.04

Normal equation, $9\Delta t - 0.014a_w - 2.006a_e - 1.08c - 176^s.70 = 0$

Adopted $a_w = +3^s.725$ $a_e = +3^s.759$ $c = -0^s.440$

Clock slow $20^s.46$ at $12^h.45$.

[St. Louis, Missouri, May 28, 1890. After signals. Observer, Pritchett.]

Name of star.	Clamp.	*A*	*C*	*t*	*v*
				h. m. s.	s.
θ Virginis	E.	−0.692	−1.00	13 03 53.82	+.01
43 Comæ		+0.202	1.14	06 23.87	+.01
20 Can. Ven		−0.059	1.33	12 17.08	−.02
Gr. 2001	E.	−1.931	−3.41	23 08.14	+.02
α Draconis	W.	−1.044	+2.36	14 01 11.78	+.01
d Bootis		+0.250	1.11	06 03.40	.00
ι Virginis	W.	+0.699	+1.00	09 53.35	−.02

Normal equation, $7\Delta t - 0.095a_w - 1.096a_e - 2.40c - 139^s.62 = 0$

Adopted $a_w = +3^s.745$ $a_e = +3^s.660$ $c = -0^s.436$

Clock slow $20^s.42$ at $13^h.63$.

TABLE III.—*Details of time work*—Continued.

[St. Louis, Missouri, May 29, 1890. Before signals. Observer, Pritchett.]

Name of star.	Clamp.	*A*	*C*	*t*			*v*
				h.	*m.*	*s.*	*s.*
κ Draconis	W.	—1.571	+2.98	12	28	25.97	.00
31 Com. Ber		+0.206	1.13		46	02.23	—.10
δ Virginis		+0.570	1.00		49	46.31	+.03
ε Virginis	W.	+0.464	+1.02	12	56	24.45	+.03
α Virginis	E.	+0.770	—1.02	13	19	06.39	+.04
Gr. 2001		—1.931	3.41		22	55.70	+.04
ζ Virginis		+0.624	1.00		28	47.42	+.04
m Virginis		+0.735	1.01		35	32.77	—.04
τ Bootis	E.	+0.371	—1.05		41	43.54	—.05

Normal equation, $9\Delta t - 0.331a_w + 0.569a_e - 1.36c - 182^s.22 = 0$

Adopted $a_w = -2^s.650$ $a_e = -2^s.830$ $c = -0^s.439$

Clock slow $20^s.26$ at $13^h.16$.

[St. Louis, Missouri, May 29, 1890. After signals. Observer, Pritchett.]

Name of star.	Clamp.	*A*	*C*	*t*			*v*
				h.	*m.*	*s.*	*s.*
α Draconis	E.	—1.044	—2.36	14	01	02.89	.00
α Bootis		+0.250	1.11		05	04.17	+.01
ι Virginis		+0.699	1.00		09	57.19	.00
φ Virginis		+0.648	1.00		22	14.43	+.03
ρ Bootis	E.	+0.157	—1.16		26	46.36	—.06
π Bootis	W.	+0.387	+1.04		35	16.08	+.06
μ Virginis		+0.696	1.00		36	59.27	+.04
109 Virginis		+0.592	1.00		40	24.46	+.07
ψ Bootis		+0.220	1.13		50	26.22	—.06
δ Bootis		+0.102	1.20	15	10	46.20	—.12
1 H. Urs. Min	W.	—1.290	+2.65		13	03.38	—.01

Normal equation, $11\Delta t + 0.707a_w + 0.710a_e + 1.39c - 108^s.48 = 0$

Adopted $a_w = -2^s.77$ $a_e = -2^s.83$ $c = -0^s.480$

Clock slow $20^s.28$ at $14^h.58$.

TABLE III.—*Details of time work*—Continued.

[St. Louis, Missouri, June 7, 1890. Observer, Pritchett.]

Name of star.	Clamp.	A	C	t			v
				h.	m.	s.	s.
4 Urs. Min.	E.	−3.072	−4.84	14	08	42.62	.00
ρ Bootis		+0.157	1.16		26	47.99	−.10
π Bootis		+0.387	1.05		35	17.42	+.03
109 Virginis		+0.696	1.00		36	01.57	+.03
μ Virginis	E.	+0.592	−1.00		40	26.45	+.04
β Urs. Min	W.	−2.215	+3.77	14	50	36.45	+.01
β Libræ		+0.748	1.01	15	10	52.66	−.04
τ^1 Serpentis		+0.403	1.04		20	26.81	+.05
β Cor. Bor		+0.182	1.15		23	02.03	−.02
α Cor. Bor	W.	+0.224	+1.12	15	29	46.46	−.01

Normal equation, $10\Delta t - 0.658a_w - 1.240a_e - 0.96c - 200^s.53 = 0$

Adopted $a_w = 5^s.820$ $a_e = 5^s.662$ $c = 0^s.569$

Clock slow $18^s.91$ at $14^h.87$.

[St. Louis, Missouri, June 9, 1890. Observer, Pritchett.]

Name of star.	Clamp.	A	C	t			v
				h.	m.	s.	s.
τ Virginis	W.	+0.60	+1.00	13	55	46.21	+.04
α Draconis		−1.04	2.36	14	01	12.29	−.01
d Bootis		+0.25	1.11		05	06.80	−.03
ι Virginis		+0.70	1.00		09	58.10	+.08
λ Bootis	W.	−0.20	+1.46		11	57.06	−.10
ρ Bootis	E.	+0.16	−1.16		26	46.57	−.04
π Bootis		+0.39	1.05		35	14.50	.00
109 Virginis		+0.59	1.00		40	22.22	−.01
β Urs. Min.		−2.22	3.77		50	44.43	.00
ψ Bootis		+0.22	1.13	14	59	25.25	−.01
β Libræ	E.	+0.75	−1.01	15	10.	46.30	+.06

Normal equation, $11\Delta t + 0.31a_w - 0.11a_e - 2.19c - 207^s.15 = 0$

Adopted $a_w = +0^s.891$ $a_e = +0^s.807$ $c = -1^s.267$

Clock slow $18^s.56$ at $14^h.49$

TABLE III.—*Details of time work*—Continued.

[St. Louis, Missouri, June 10, 1890. Observer, Pritchett.]

Name of star.	Clamp.	*A*	*C*	*t*			*v*
				h.	*m.*	*s.*	*s.*
φ Virginis	E.	+0.648	−1.00	14	22	11.93	−.03
5 Urs. Min		−2.559	4.20		27	40.30	.00
π Bootis		+0.387	1.04		35	14.38	−.02
109 Virginis		+0.592	1.00		40	21.43	+.01
α Libræ		+0.842	1.04		44	26.86	+.06
Pz. XIV, 221	E.	+0.416	−1.04		50	42.67	−.03
β Libræ	W.	+0.748	+1.01	15	10	45.77	−.07
τ Serpentis		+0.403	1.04		20	23.37	+.07
α Cor. Bor		+0.224	1.12		29	44.77	−.01
α Serpentis		+0.531	1.01		38	32.51	−.01
β Serpentis		+0.404	1.04		40	48.71	−.01
μ Serpentis		+0.666	1.00		43	33.77	+.03
ζ Urs. Min	W.	−3.099	+4.87		48	02.21	.00

Normal equation, $13\Delta t-0.123a_w+0.326a_e+1.77c-237^s.28=0$

Adopted $a_w=+4^s.090$ $a_e=+4^s.079$ $c=-0^s.453$

Clock slow $18^s.25$ at $15^h.12$.

[St. Louis, Missouri, June 11, 1890. Observer, Pritchett.]

Name of star.	Clamp.	*A*	*C*	*t*			*v*
				h.	*m.*	*s.*	*s.*
γ² Urs. Min	W.	−1.82	+3.28	15	20	41.50	+.03
β Cor. Bor		+0.18	1.15		22	01.64	−.07
α Cor. Bor		+0.22	1.12		29	49.95	+.05
α Serpentis		+0.53	1.01		38	34.97	+.02
β Serpentis	W.	+0.40	+1.04		40	50.67	+.06
μ Serpentis	E.	+0.67	−1.00		43	35.90	−.04
ε Serpentis		+0.56	1.00		45	03.11	+.01
ζ Urs. Min		−3.10	4.87		47	45.14	−.02
ε Cor. Bor		+0.22	1.12		52	45.12	−.09
δ Ophhiuchi		+0.67	1.00	16	08	18.08	−.02
λ Herculis	E.	+0.35	−1.06		16	47.33	+.06

Normal equation, $11\Delta t-0.49a_w-0.63a_e-2.45c-89^s.25=0$

Adopted $a_w=-0^s.126$ $a_e=-0^s.128$ $c=-0^s.403$

Clock slow $18^s.01$ at $15^h.73$.

TABLE III.—*Details of time work*—Continued.

[St. Louis, Missouri, April 29, 1890. Observer, Woodward.]

Name of star.	Clamp.	*A*	*C*	*t*			*v*
				h.	*m.*	*s.*	*s.*
Gr. 1706	W.	−3.17	+4.97	10	51	17.07	+.04
χ Leonis		+0.51	1.01		59	31.96	+.04
p Leonis		+0.59	1.00	11	01	29.07	−.06
δ^3 Leonis	W.	+0.32	+1.07		08	26.55	−.03
τ Leonis	E.	+0.58	−1.00		22	26.61	−.06
λ Draconis		−1.52	2.92		24	56.90	−.06
ν Leonis		+0.63	1.00		31	28.97	−.02
χ Urs. Maj		−0.26	1.51		40	22.46	+.06
β Leonis	E.	+0.41	−1.04		43	36.56	+.11

Normal equation, $9\Delta t-1.91a+0.58c+73^s.66=0$

Adopted $a_w=-2^s.43$ $a_e=2^s.43$ $c=-0^s.89$

Chronometer fast $8^s.64$ at $11^h.29$.

[St. Louis, Missouri, May 1, 1890. Observer, Woodward.]

Name of star.	Clamp.	*A*	*C*	*t*			*v*
				h.	*m.*	*s.*	*s.*
λ Draconis	W.	−1.52	+2.92	11	25	11.39	+.08
ν Leonis		+0.63	1.00		31	32.83	+.01
χ Urs. Maj		−0.26	1.51		40	29.90	−.04
β Virginis		+0.59	1.00		45	11.86	+.03
π Virginis	W.	+0.52	+1.01		56	28.14	−.03
ο Virginis	E.	+0.50	−1.01		59	47.48	−.12
4 Draconis		−3.10	4.91	12	07	12.99	−.01
20 Comæ		+0.32	1.08		24	23.11	−.01
24 Comæ		+0.36	1.06		29	48.19	+.06
δ Virginis	E.	+0.57	−1.00		50	15.14	+.03

Normal equation, $10\Delta t-0.04a_w-1.35a_c-1.62c+117^s.75=0$

Adopted $a_w=+0^s.43$ $a_e=+0^s.26$ $c=-1^s.43$

Chronometer fast $11^s.97$ at $12^h.02$.

TABLE III.—*Details of time work*—Continued.

[St. Louis, Missouri, May 2, 1890. Observer, Woodward.]

Name of star.	Clamp.	*A*	*C*	*t*			*v*
				h.	*m.*	*s.*	*s.*
20 Comæ	W.	+0.32	+1.08	12	24	26.61	—.03
κ Draconis		—1.57	2.98		29	05.57	—.01
ε Virginis		+0.46	1.02		56	56.92	+.01
θ Virginis		+0.69	1.00	13	4	29.92	.00
43 Comæ	W.	+0.20	+1.14		6	59.62	.00
ζ Urs. Maj	E.	—0.51	—1.77		19	45.45	—.11
η Bootis		+0.36	1.06		49	41.57	.00
τ Virginis		+0.60	1.00		56	17.46	+.02
α Draconis		—1.04	2.30	14	01	41.64	+.13
d Bootis	E.	+0.25	—1.11		05	37.79	—.02

Normal equation, $10\Delta t+0.10a_w-0.34a_e-0.08c+8^s.68=0$

Adopted $a_w=+0^s.61$ $a_e=+0^s.43$ $c=-0^s.20$

Chronometer fast $13^s.86$ at $13^h.32$.

[St. Louis, Missouri, June 7, 1890. Observer, Woodward.]

Name of star.	Clamp.	*A*	*C*	*t*			*v*
				h.	*m.*	*s.*	*s.*
4 Urs. Min	W.	—3.07	+4.81	14	10	06.92	.00
ρ Bootis		+0.16	1.16		27	48.58	+.21
π Bootis, pr		+0.39	1.05		36	16.14	+.03
μ Virginis		+0.70	1.00		37	58.15	—.09
109 Virginis	W.	+0.59	+1.00		41	23.63	—.16
β Urs. Min	E.	—2.22	—3.77		51	49.30	.00
β Libræ		+0.75	1.01	15	11	47.42	—.10
τ^1 Serpentis		+0.40	1.04		21	24.02	+.09
β Cor. Bor		+0.16	1.15		24	00.55	—.11
α Cor. Bor	E.	+0.22	—1.12		30	44.02	+.10

Normal equation, $10\Delta t-1.23a_w-0.67a_e+0.96c-18^s.14=0$

Adopted $a_w=+0^s.77$ $a_e=+1^s.02$ $c=-0^s.048$

Chronometer fast $41^s.65$ at $14^h.89$.

TABLE III.—*Details of time work*—Continued.

[St. Louis, Missouri, June 9, 1890. Observer, Woodward.]

Name of star.	Clamp.	*A*	C	*t*			*v*
				h.	*m.*	*s.*	*s.*
ε Bootis	W.	+0.35	+1.06	13	50	10.31	—.06
τ Virginis		+0.60	1.00		56	46.36	.00
α Draconis		—1.04	2.36	14	02	09.59	—.05
d Bootis		+0.25	1.11		06	06.69	+.07
ι Virginis		+0.70	1.00		10	58.24	—.03
λ Bootis	W.	—0.20	+1.46		12	56.25	+.05
ρ Bootis	E.	+0.16	—1.16		27	48.84	—.25
π Boots, pr		+0.39	1.04		36	17.11	+.14
109 Virginis		—0.59	1.00		41	24.87	+.11
β Urs. Maj		—2.22	3.77		51	48.74	.00
ψ Bootis		+0.22	1.13	15	00	27.70	—.02
β Libræ	E.	+0.75	—1.01		11	48.89	+.02

Normal equation, $12\Delta t+0.66a_w-0.11a_e-1.12c+4^s.77=0$

Adopted $a_w=+0^s.173$ $a_e=+0^s.239$ $c=-0^s.047$

Chronometer fast $42^s.41$ at $14^h.43$.

[St. Louis, Missouri, June 10, 1890. Observer Woodward.]

Name of star.	Clamp.	*A*	*C*	*t*			*v*
				h.	*m.*	*s.*	*s.*
φ Virginis	W.	+0.65	+1.00	14	23	16.01	—.02
5 Urs. Min.		—2.56	4.20		28	33.32	.00
π Bootis, pr		+0.39	1.05		36	17.46	.00
109 Virginis		+0.59	1.00		41	25.26	—.01
α^2 Libræ		+0.84	1.04		45	31.61	—.05
Pz. XIV, 221	W.	+0.42	+1.04		51	45.96	+.10
β Libræ	E.	+0.75	—1.01	15	11	49.10	—.07
τ Serpentis		+0.40	1.04		21	25.39	+.12
β Cor. Bor		+0.18	1.15		24	01.85	+.05
α Cor. Bor		+0.22	1.12		30	45.91	—.08
β Serpentis		+0.40	1.04		41	50.70	+.01
μ Serpentis		+0.67	1.00		44	36.71	—.04
ζ Urs. Min	E.	—3.10	—4.87		48	48.32	.00

Normal equation, $13\Delta t+0.33a_w-0.48a_e-1.90c+8^s.87=0$

Adopted $a_w=+0^s.089$ $a_e=+0^s.161$ $c=-0^s.093$

Chronometer fast $42^s.69$ at $15^h.12$.

TABLE III.—*Details of time work*—Continued.

[St. Louis, Missouri, June 11, 1890. Observer, Woodward.]

Name of star.	Clamp.	*A*	*C*	*t*			*v*
				h.	*m.*	*s.*	*s.*
γ^2 Urs. Min	W.	−1.82	+3.28	15	21	41.60	− .02
β Cor. Bor		+0.18	1.15		24	02.27	− .02
α Cor. Bor		+0.22	1.12		30	46.43	− .04
α Serpentis		+0.53	1.01		39	35.57	+ .06
β Serpentis	W.	+0.40	+1.04		41	51.23	+ .04
μ Serpentis	E.	+0.67	−1.00		44	37.07	+ .01
ε Serpentis		+0.56	1.00		46	04.26	.00
ζ Urs. Min		−3.10	4.87		48	48.41	− .01
ε Cor. Bor		+0.22	1.12		53	46.48	.00
δ Ophiuchi		+0.67	1.00	16	09	19.18	− .04
γ Herculis	E.	+0.35	−1.06		17	48.46	− .02

Normal equation, $11\Delta t - 0.49a_w - 0.63a_e - 2.45c + 10^s.30 = 0$

Adopted $a_w = 0^s.00$ $a_e = +0^s.111$ $c = -0^s.084$

Chronometer fast $42^s.95$ at $15^h.76$.

7. *Time-piece corrections and rates.*—Collecting the clock corrections and their epochs from the preceding tables and computing the hourly rates from the differences of the corrections and epochs, there results the following Table IV:

TABLE IV.—*Time-piece corrections, epochs, rates, etc.*

Station.	Date.	Chronometer correction.	Epoch.	Hourly rate of time-piece.	Chronometer by Bond & Sons.
	1889.	*s.*	*h.*	*s.*	
Spearville, Kansas	Oct. 27	—39.23	21.41		187
		—39.24	22.87	—0.003	
	28	—39.49	21.41		
		—39.57	22.81	—0.057	
	Nov. 2	—41.67	21.93		
		—41.64	23.26	+0.023	
Boisé City, Idaho..........	15	—36.77	22.40		
		—36.68	24.35	+0.051	
	23	—40.98	22.52		
		—40.95	24.57	+0.015	
	24	—40.82	22.91		
		—40.74	24.51	+0.050	
Cisco, Texas	Dec. 8	+ 0.62	0.08		
		+ 0.54	2.17	—0.038	
	10	— 2.17	0.39		
		— 2.36	2.03	—0.134	
	11	— 3.03	0.53		
		— 3.27	2.41	—0.128	
St. Louis, Missouri	18	— 2.24	0.83		
		— 2.32	5.24	—0.018	
	19	— 2.55	2.20		
		— 2.58	4.17	—0.015	
	1890.				
	Apr. 29	— 8.64	11.29		
	May 1	—11.97	12.02		
	2	—13.86	13.32		
Sierra Blanca, Texas.......	16	—10.07	11.25		
		—10.08	12.91	+0.006	
	25	—17.31	11.38		
		—17.38	13.36	+0.035	
	28	—18.64	11.41		
		—18.72	13.33	+0.042	
	29	—19.31	11.79		
		—19.43	13.36	+0.076	
St. Louis, Missouri	June 7	—41.65	14.89		
	9	—42.41	14.43		
	10	—42.69	15.12		
	11	—42.95	15.76		

TABLE IV.—*Time-piece corrections, epochs, rates, etc.*—Continued.

Station.	Date.	Clock correction.	Epoch.	Hourly rate of time-piece.	Clock by Howard.
	1889.	*s.*	*h.*	*s.*	
St. Louis, Missouri	Oct 27	—389.91	22.32		214
		—390.05	23.67	—0.104	
	28	—391.83	22.32		
		—392.05	23.62	—0.169	
	Nov. 2	—400.56	22.87		
		—400.63	24.18	—0.053	
	15	+ 14.41	0.27		
		+ 14.34	1.93	—0.041	
	23	+ 14.23	0.46		
		+ 14.18	2.08	—0.030	
	25	+ 14.18	23.97		
		+ 14.32	3.18	+0.046	
	Dec. 8	+ 15.50	0.92		
		+ 15.48	3.08	—0.010	
	10	+ 15.49	1.04		
		+ 15.40	2.64	—0.051	
	11	+ 15.51	1.32		
		+ 15.60	2.64	+0.069	
	18	+ 15.59	0.83		
		+ 15.68	5.26	+0.020	
	19	+ 15.51	2.09		
		+ 15.57	4.15	+0.029	
	1890.				
	Apr. 29	+ 24.33	11.28		
	May 1	+ 24.29	12.00		
	2	+ 24.23	13.30		
	16	+ 22.26	12.36		
		+ 22.23	13.85	—0.020	
	25	+ 20.99	12.63		
		+ 21.00	14.45	—0.006	
	28	+ 20.45	12.45		
		+ 20.42	13.63	—0.026	
	29	+ 20.26	13.16		
		+ 20.28	14.58	+0.014	
	June 7	+ 18.91	14.87		
	9	+ 18.56	14.49		
	10	+ 18.25	15.12		
	11	+ 18.01	15.73		

(8) *Record of clock comparisons and apparent differences of longitude.*—In comparing time-pieces both automatic and arbitrary signals were exchanged. In general the comparisons were derived from the mean of the arbitrary signals so selected as to give a nearly symmetrical distribution throughout a whole minute and throughout one revolution of the chronograph cylinder. A like distribution of automatic signals, when equally legible, gave the same result. The records of these comparisons and the apparent differences of longitude of the field stations and St. Louis are given in Table V, and the corresponding data for the personal equation work are given in Table VI.

TABLE V.—*Apparent differences of longitude.*

[Results for differences from arbitrary signals made at field station.]

Field station.	Date.	Mean difference of clock-face times.			Number of signals.	St. Louis clock correction.		Field chronometer correction.	Field station west of St. Louis.		
	1889.	*h.*	*m.*	*s.*		*m.*	*s.*	*s.*	*h.*	*m.*	*s.*
Spearville, Kansas..........	Oct. 27	0	44	02.23	25	−6	29.99	−39.24	0	38	11.48
	28			03.68	25	−6	31.95	−39.54			11.28
	Nov. 2			10.45	30	−6	40.59	−41.65			11.51
Boisé City, Idaho..........	15	1	43	12.01	19	+	14.36	−36.71	1	44	03.08
	23			07.97	21	+	14.20	−40.96			03.13
	24			08.11	15	+	14.22	−40.78			03.11
Cisco, Texas................	Dec. 8	0	34	51.54	22	+	15.49	+00.56		35	06.47
	10			48.72	11	+	15.44	−02.31			06.47
	11			47.78	19	+	15.57	−03.16			06.51
	1890.										
Sierra Blanca, Texas........	May 16	0	60	04.15	13	+	22.24	−10.08	1	00	36.47
	25		59	58.11	15	+	20.99	−17.36			36.46
	28		59	57.32	8	+	20.44	−18.70			36.46
	29		59	56.80	11	+	20.27	−19.39			36.46

[Results for differences from arbitrary signals made at St. Louis.]

	1889.										
Spearville, Kansas..........	Oct. 27	0	44	02.10	12	−6	29.98	−39.24	0	38	11.36
	28			03.57	21	−6	31.94	−39.54			11.15
	Nov. 2			10.33	23	−6	40.59	−41.65			11.39
Boisé City, Idaho..........	15	1	43	11.72	23	+	14.36	−36.71	1	44	02.79
	23			07.70	26	+	14.20	−40.96			02.86
	24			07.84	16	+	14.22	−40.78			02.84
Cisco, Texas................	Dec. 8	0	34	51.39	29	+	15.49	+00.56	0	35	06.32
	10			48.59	24	+	15.44	−02.30			06.33
	11			47.64	18	+	15.56	−03.16			06.36
	1890.										
Sierra Blanca, Texas........	May 16	0	60	03.91	15	+	22.24	−10.08	1	00	36.23
	25		59	57.82	13	+	20.99	−17.36			36.17
	28		59	57.00	11	+	20.44	−18.70			36.14
	29		59	56.52	7	+	20.27	−19.39			36.18

TABLE VI.—*Apparent differences of longitude. Personal equation work at St. Louis.*

[From record of Geological Survey chronograph.]

Date.	Mean difference of clock-face times.	Number of signals.	St. Louis clock correction.	Field chronometer correction.	Δλ
1889.	*s.*		*s.*	*s.*	*s.*
Dec. 18	17.97	21	+15.57	— 2.22	0.18
	18.00	17	+15.59	— 2.24	.17
	18.01	13	+15.61	— 2,25	.15
	18.06	18	+15.66	— 2.30	.10
	18.06	15	+15.68	— 2.32	.06
	18.06	18	+15.70	— 2.34	.04
19	18.25	5	+15.49	— 2.54	.22
	18.25	5	+15.51	— 2.55	.19
	18.26	5	+15.53	— 2.56	.17
	18.28	5	+15.55	— 2.57	.16
	18.28	5	+15.57	— 2.58	.13
	18.29	5	+15.59	— 2.59	.11
1890.					
Apr. 29	33.23	10	+24.33	— 8.63	.27
May 1	36.44	10	+24.29	—11.97	.18
2	38.17	15	+24.23	—13.88	.06
June 7	60.83	15	+18.91	—41.65	.27
9	61.13	15	+18.56	—42.41	.16
10	61.16	15	+18.25	—42.69	.22
11	61.10	15	+18.01	—42.95	.14

[From record of Prof. Pritchett's chronograph.]

1889.					
Dec. 18	17.99	9	+15.57	— 2.22	0.20
	18.00	9	+15.59	— 2.24	.17
	18.00	13	+15.61	— 2.25	.14
	18.07	16	+15.66	— 2.30	.11
	18.07	11	+15.68	— 2.32	.07
	18.08	17	+15.70	— 2.34	.04
19	18.24	5	+15.49	— 2.54	.21
	18.22	5	+15.51	— 2.55	.16
	18.25	5	+15.53	— 2.56	.16
	18.28	5	+15.55	— 2.57	.16
	18.28	5	+15.53	— 2.58	.13
	18.28	5	+15.55	— 2.59	.10
1890.					
Apr. 29	33.21	10	+24.33	— 8.63	.25
May 1	36.42	10	+24.29	—11.97	.16
2	38.17	15	+24.23	—13.88	.06
June 7	60.81	15	+18.91	—41.65	.25
9	61.11	15	+18.56	—42.41	.14
10	61.16	15	+18.25	—42.69	.22
11	61.10	15	+18.01	—42.95	.14

(9) *Longitude differences uncorrected for personal and instrumental equation.*—Calling the result for a longitude difference from the record of the western observer's chronograph $\varDelta\lambda_1$, and the corresponding result from the eastern observer's chronograph $\varDelta\lambda_2$, we get the following table of results for longitude differences and transmission times:

TABLE VII.—*Approximate results for longitude differences and transmission times.*

Station.	Date.	$\Delta\lambda_1$			$\Delta\lambda_2$			$\frac{1}{2}(\Delta\lambda_2+\Delta\lambda_1)$			$\frac{1}{2}(\Delta\lambda_2-\Delta\lambda_1$
	1889.	h.	m.	s.	h.	m.	s.	h.	m.	s.	s.
Spearville, Kansas	Oct. 27	0	38	11.36	0	38	11.48	0	38	11.420	0.060
	28			11.18			11.28			.230	.050
	Nov. 2			11.39			11.51			.450	.060
Boisé City, Idaho.........	Nov. 15	1	44	02.79	1	44	03.08	1	44	02.935	0.145
	23			02.86			03.13			.995	.135
	24			02.84			03.11			.975	.125
Cisco, Texas	Dec. 8	0	35	06.32	0	35	06.47	0	35	06.385	0.075
	10			06.33			06.47			.400	.070
	11			06.36			06.51			.435	.075
	1890.										
Sierra Blanca, Texas.....	May 16	1	00	36.23	1	00	36.47	1	00	36.350	0.120
	25			36.17			36.46			.320	.145
	28			36.14			36.46			.300	.160
	29			36.18			36.46			.320	.140

The values of $\frac{1}{2}(\varDelta\lambda_1+\varDelta\lambda_2)$ in the preceding table give a series of observation equations of the form

$$\varDelta\lambda-\tfrac{1}{2}(\varDelta\lambda_1+\varDelta\lambda_2)=v.$$

Denoting the values of $\varDelta\lambda$ for the several stations by accents we find the following equations:

Observation equations for the quantities $\varDelta\lambda$.

Station.	Date.	Equation.				Residual.	Weight.
	1889.		h.	m.	s.	s.	
Spearville, Kansas	Oct. 27	$1\Delta\lambda^{\mathrm{i}}$	—0	38	11.420	—0.053	1
	28	1			.230	+0.137	1
	Nov. 2	1			.450	—0.083	1
Boisé City, Idaho	15	$1\Delta\lambda^{\mathrm{ii}}$	—1	44	02.935	+0.031	1
	23	1			.995	—0.029	0.2
	24	1			.975	—0.009	1
Cisco, Texas	Dec. 8	$1\Delta\lambda^{\mathrm{iii}}$	—0	35	06.385	+0.016	1
	10	1			.400	+0.001	1
	11	1			.435	—0.034	0.5
	1890.						
Sierra Blanca, Texas.......	May 16	$1\Delta\lambda^{\mathrm{iv}}$	—1	00	36.350	+0.028	1
	25	1			.320	—0.002	1
	28	1			.300	—0.022	1
	29	1			.320	—0.002	1

The result of November 23 for Boisé City is given a weight of 0.2 for the reason that no time observations were made at St. Louis on that date, the clock correction being interpolated from observations of November 22 and 24. Likewise, the result of December 11 for Cisco is given half weight for the reason that the time determinations both at St. Louis and Cisco were imperfect (on account of cloudiness) after exchange of signals on that date.

Since the results for the first three stations were obtained under similar circumstances, and will have the same correction for personal equation applied to them, we shall treat the first nine of the above equations as one group and the last four as another group. There result, therefore,

$$
\begin{array}{llllll}
 & & \text{h} & \text{m} & \text{s} & \text{s} \\
\Delta\lambda^{\text{i}} & = & 0 & 38 & 11.367 & \pm 0.028, \\
\Delta\lambda^{\text{ii}} & = & 1 & 44 & 02.966 & \pm 0.033, \\
\Delta\lambda^{\text{iii}} & = & 0 & 35 & 06.401 & \pm 0.031, \\
\Delta\lambda^{\text{iv}} & = & 1 & 00 & 36.322 & \pm 0.007.
\end{array}
$$

(10) *Corrections for personal and instrumental equation*, 1889.—As stated in section (6), the observations for personal equation were made in the same way as those for longitude. In the work of 1889, however, six comparisons of the time-pieces were made on each of the dates of observation instead of one, as is usual in the longitude work. These comparisons were made at the beginning of each of the two time determinations, at the epoch of each reversal, and at the end of each determination. The earlier and later of such comparisons have less weight than those made near the mean of the epochs of the two clock corrections; and since the rates of the time-pieces are obtained by dividing the difference of the clock corrections by the difference of their epochs, the early and late comparisons will show in an exaggerated form any change in personal equation which may occur. But since the personal equation is the unknown quantity sought, we have considered the clock corrections as fallible quantities giving rise to discrepant values of the personal equation. If we call Δt^{i} and t^{i} the clock correction and epoch respectively from the first time determination, and denote by Δt^{ii} and t^{ii} the corresponding quantities from the second determination, the correction to either time-piece at the time $t+t^{\text{i}}$ is of the form

$$(1-m)\Delta t^{\text{i}} + m\Delta t^{\text{ii}}, \tag{a}$$

in which

$$m=\frac{\tau}{t^{\text{ii}}-t^{\text{i}}};$$

and if t is the time of comparison,

$$\tau=t-t^{\text{i}}.$$

Assuming the probable errors of Δt^{i} and Δt^{ii} equal, the weight of the above correction is proportional to

$$(1-2m+2m^2)^{-1}. \tag{b}$$

A result for personal equation, or $\frac{1}{2}(\Delta\lambda_1+\lambda_2)$ involves the difference of two corrections of the form (*a*), but since the values of *m* are nearly identical in the two, weights may be computed from (*b*). The following table gives the results for personal equation, together with their weights and the data on which the latter depend:

Results for personal equation of 1889.

Date.	$t^E - t^i$	t	m	Weight.	Result $\frac{1}{2}(\Delta\lambda_1+\Delta\lambda_2)$.	Weighted mean.
1889.	h.	h.			s.	s.
Dec. 18	4.42	−1.16	−0.262	0.60	0.190	
18		−0.28	−0.005	0.99	.170	
18		+0.77	+0.174	1.40	.145	
18		+3.47	+0.785	1.51	.105	
18		+4.20	+0.950	1.11	.065	
18		+5.35	+1.210	0.66	.040	0.119
19		−0.79	−0.392	0.47	0.215	
19		+0.04	+0.020	1.04	.175	
19		+0.64	+0.317	1.76	.165	
19		+1.38	+0.683	1.76	.160	
19		+2.11	+1.049	0.91	.130	
19		+2.74	+1.356	0.51	.105	0.159

The results from the individual comparisons indicate a progressive decrease of the equation on both dates. A decrease is no doubt real in each case, but its apparent progressive character is due to the linear function used in computing the clock corrections rather than to any such systematic change in the equation itself. It would appear that the early and late comparisons were of little value except to show that the rates attributed to the time-pieces are not the real rates. The two weighted mean values, however, differ immaterially from the values which would have resulted from single comparisons at times falling midway between the epochs of the clock corrections.

Taking the half sum of the two weighted means in the table and computing a probable error from their difference, we have

$$0^s.139 \pm 0^s.013.$$

Prof. Pritchett's transit during this personal equation work was west of Woodward's 4.2 feet, or $0^s.004$. This diminishes the above result to

$$0^s.135 \pm 0^s.013.$$

In view of the previous and subsequent experience of the same observers in determining their relative equation, it would appear that the probable error just given is too small. As explained below, the mean of seven results, obtained on as many different dates in 1890, shows a probable error of $\pm 0^s.021$. It is evident that the mean of the more consistent though smaller number of results of 1889 should not have a less probable error. Hence we adopt as the value applicable to the work for 1889

$$0^s.135 \pm 0^s.021.$$

This correction will be applied to $\Delta\lambda^{i}$, $\Delta\lambda^{ii}$, and $\Delta\lambda^{iii}$ given in section (9) above. It means that Pritchett observes the transit of a star later than Woodward, and hence the longitude differences are to be increased by this amount.

(11) *Correction for personal and instrumental equation*, 1890.—In the personal equation work of 1890, applicable to the apparent longitude difference of St. Louis and Sierra Blanca, Texas, or $\Delta\lambda^{iv}$, given in section (9) above, but one time determination and one comparison of timepieces were made on any date. Observations were made at St. Louis on April 29, May 1, and May 2, before going to Sierra Blanca, and on June 7, 9, 10, and 11, after returning from that station. The results derived from Table III are given below:

Results for personal equation of 1890.

Date.	Result.	Correction for position of piers.	Corrected result.
1890.	*s.*	*s.*	*s.*
Apr. 29	0.26	+0.004	0.264
May 1	0.17	+0.004	0.174
2	0.06	+0.004	0.064
June 7	0.26	−0.004	0.256
9	0.15	−0.004	0.146
10	0.22	−0.004	0.216
11	0.14	−0.004	0.136

The piers used in this personal equation work were 4.2 feet or $0^s.004$ apart. Pritchett was east of Woodward on the first three dates and west of him on the last four dates. Hence the corrections given in the third column of the table above.

Assigning equal weights to the results in this table, the mean of the first three values in the last column, or the mean value of the equation before the exchanges for the longitude of Sierra Blanca, is $0^s.167$. Likewise the mean of the last four corrected results, or the mean value of the equation after the longitude exchanges, is $0^s.188$. The half sum of these two values, or $0^s.178$, was applied to $\Delta\lambda^{iv}$ of section (9) above in deriving the longitude of Sierra Blanca for the purpose of fixing the one hundred and fifth meridian. It would have been better, perhaps, to have used the mean of all the corrected results. This mean is $0^s.179 \pm 0^s.021$. It differs immaterially from the applied value, but its probable error derived from the discrepancies between the seven individual results and their mean, appears to be the best index of the precision of the applied value. Hence we adopt for the personal equation correction to be added to the longitude difference of St. Louis and Sierra Blanca, or $\Delta\lambda^{iv}$ of section (9),

$$0^s.178 \pm 0^s.021.$$

(12) *Arrangement of telegraphic circuits, transmission times, and instrumental equation.*—The routes of the telegraphic circuits used and their approximate lengths are as follows:

	Miles.
St. Louis to Spearville, Kansas, via Kansas City, Missouri	640
St. Louis to Boisé City, Idaho, via Omaha, Nebraska, and Ogden, Utah........	1,950
St. Louis to Cisco, Texas, via Pine Bluff, Arkansas, and Dallas, Texas.........	860
St. Louis to Sierra Blanca, Texas, via Cairo, Illinois, Pine Bluff and Texarkana, Arkansas, and Sherman and Dallas, Texas....................................	1,344

In the first of these circuits there were repeaters at Kansas City, and Nickerson, Kansas; in the second there were repeaters at Omaha, Nebraska, and at Ogden, Utah; in the third there were repeaters at Pine Bluff, Arkansas, and at Dallas, Texas; in the fourth at Pine Bluff, Arkansas, at Dallas, Texas, and at Big Springs, Texas.

Taking means of the transmission times given in Table VII, we have the following table of results:

Transmission times, lengths of circuits, etc.

Field station.	Average transmission time.	Number of repeaters used.	Approximate total length of telegraph line.
	s.		*Miles.*
Spearville, Kansas.........	0.057	2	640
Boisé City, Idaho..........	0.138	2	1,950
Cisco, Texas................	0.073	2	860
Sierra Blanca, Texas.......	0.141	3	1,344

In all cases the transmission times given above involve the action times of three relays in addition to the action times of the repeaters. These relays are the clock relay, which repeats to the chronograph circuit; the main line relay, which also repeats to the chronograph circuit, and the chronograph relay. The electric apparatus used by Prof. Pritchett differed from that used by the field observer only in the chronograph relay and in the transit key. Whatever difference these may have produced should appear in the correction for personal equation given in sections (10) and (11) above.

(13) *Adopted longitudes.*—Applying the corrections for personal and instrumental equation given in sections (10) and (11), namely, $+0^{s}.135 \pm 0^{s}.021$ for 1889, and $+0^{s}.178 \pm 0^{s}.021$ for 1890, we have for the longitudes of the several field stations relative to the pier used at Washington University, St. Louis, Missouri:

	West of St. Louis.			
	h.	*m.*	*s.*	*s.*
Spearville, Kansas	0	38	11.502	±0.035
Boisé City, Idaho..	1	44	03.101	±0.039
Cisco, Texas	0	35	06.536	±0.037
Sierra Blanca, Texas	1	00	36,500	±0.022

The longitude relative to Greenwich of the pier at St. Louis, used from 1881 to 1884, has been determined by the U. S. Coast and Geodetic Survey. Its adjusted value, given on page 423 of the report of that Survey for 1884, is

$$6^h\ 00^m\ 49^s.163.$$

The pier used in 1889 is 6 feet or $0^s.005$ west of this position, while the pier occupied during the longitude exchanges in 1890 is $0^s.001$ west of this position. Hence, to get longitudes with respect to Greenwich, we must add to the first three of the above differences $6^h\ 00^m\ 49^s.168$, and to the last $6^h\ 00^m\ 49^s.164$. Applying these values, we have—

	West of Greenwich.		
	h.	*m.*	*s.*
Spearville, Kansas	6	39	00.670
Boisé City, Idaho	7	44	52.269
Cisco, Texas	6	35	55.704
Sierra Blanca, Texas	7	01	25.668

(14) *Geographical positions of piers.*—Collecting the weighted mean latitudes of the observing piers given in Table II, and converting the longitudes just derived into arc, we have the following table of definitive values:

TABLE VIII.—*Geographical positions of piers.*

Station.	Latitude.			Longitude.		
	°	′	″	°	′	″
Spearville, Kansas	37	59	06.34	99	45	10.05
Boisé City, Idaho	43	35	57.98	116	13	04.04
Cisco, Texas	32	23	31.45	98	58	55.56
Sierra Blanca, Texas	31	10	27.64	105	21	24.96

FIXATION OF THE ONE HUNDRED AND FIFTH MERIDIAN IN EL PASO COUNTY, TEXAS.

(15) The intersection of the one hundred and fifth meridian of longitude with the Rio Grande determines the common corner of El Paso, Jeff Davis, and Presidio Counties, Texas. The position of this meridian was not known, except within rather wide limits of error, prior to the determination of the longitude of Sierra Blanca. After the first night of longitude work at this station the observing pier was found to be about twenty-one miles west of the meridian. The method which the nature of the country suggested as most practicable and accurate for measuring this distance was that of triangulation. From their junction at Sierra Blanca, the Texas and Pacific and Southern Pacific Railways run toward the southeast along a level valley furnishing many suitable sites for base-lines, and very favorably flanked by mesas and mountains available for triangulation stations. Accordingly, the method of triangulation was adopted.

As already stated, the details of this work were carried out chiefly by Mr. A. P. Davis. It is proper to state, also, in this connection that very substantial aid was rendered us by Prof. W. von Streeruwitz, of the Texas Geological Survey. Engaged in geological and topographical work in the same vicinity, he placed his assistants and camp outfit at our disposal and thus solved for us the serious problem in this region, especially destitute of water, of subsistence and transportation. During the previous winter in connection with his topographic work, Prof. Streeruwitz had measured in the same valley a base-line about four miles long (6,400.70 meters) with the secondary apparatus of the U. S. Coast and Geodetic Survey. This line, which was connected with our triangulation, served as a valuable check on the correctness of our work.

(16) *Measurement and length of base-line.*—The site selected for a base-line was a nearly level and straight portion of the Texas and Pacific Railway, extending from Sierra Blanca to Arispe, a station or section house about five miles east. On the south side of and 80.5 feet perpendicularly from the south rail of the main track at Arispe, an iron rod about two inches in diameter and two and one-half feet long was driven into the ground so that its upper end was a few inches below the surface of the ground. This rod marks the east end of the base and is called Arispe. The measurement of the base was made along the south rail of the main track from the point on this rail defined above to the point of intersection of the rail with the meridian through the center of the transit instrument at Sierra Blanca. This center is defined by a small hole drilled into the top of the capstone of the pier. This hole marks the west end of the base and is called Pier. The distance along the meridian from Pier to the west end of the line measured on the railway track is 296.84 feet, the pier being south of the track. The angle at the Pier between true north and Arispe is 108° 30′ 06″.6, determined in a way explained below.

The length of the line between the two points on the railway track defined above was measured with a 100-foot Chesterman steel tape, U. S. G. S. No. 5. The measurement was made during the night of June 1, 1890. For very efficient aid rendered in this measurement the Survey is indebted to Prof. W. von Streeruwitz and his assistant, Mr. Taff of the Texas Geological Survey, and to Mr. Otto Peterler of the engineer staff of the Southern Pacific Railway.

The tape was stretched on the surface of the rails with a tension of 16 pounds, maintained by means of a spring-balance. The rear end of the tape was carried by Mr. Taff, who, with the assistance of Mr. Peterler, brought the 100-foot graduation of the tape into coincidence with the successive marks made on the rails at the front end. The front end was carried by Mr. Davis, who kept the tape at the standard tension. The position of the front end of the tape for a few tape lengths was marked on the rail by Prof. Streeruwitz with a cold-chisel. Although this method is a good one it failed in this instance for want of a sufficiently hard chisel. For the remainder and greater portion of the line the front end of the tape was marked by the writer with a sharp file. This method gives a well-defined mark and is more expeditious than the former, but is perhaps not quite so precise. Pins were used as in ordinary chaining to indicate the positions of the marks on the rails, and the count of the tape lengths was kept independently by three different persons. The time required in the measurement was about five hours.

The temperature of the tape was assumed to be the same as that of the rails on which it lay in close contact. To determine this temperature a thermometer was placed on the rail at the end of every ten stretches of the tape. Care was taken to bring the bulb of the thermometer into metallic contact with the rail so that it might commnicate its temperature to the bulb by the relatively rapid process of conduction. The observations showed that the measurement was begun somewhat too early in the evening (about 8 o'clock local time) for the most advantageous temperature conditions, since the temperature fell from 85° to 67° F. during the time of the first hundred stretches of the tape, and remained nearly stationary thereafter. The observed temperatures ranged from 85° F. to 61° F., the average being 68° F.

The whole distance measured was 244 tape lengths plus 8.833 feet. A tape length as here used is the distance between the 2-inch mark and the 100-foot mark of this tape when lying on a horizontal support and under a stress of 16 pounds.

The length of this space on the tape was determined by comparisons with a 300-foot steel tape of the Missouri River Commission. For this valuable courtesy the Survey is indebted to Lieut. J. C. Sanford, Corps of Engineers, U. S. Army, secretary of that Commission, and to his assistant engineers, O. B. Wheeler and G. A. Marr, who made the comparisons. The tapes were stretched in the basement of the exposition building at St. Louis, June 7, 1890. They were held up about fifteen inches above the floor on nearly frictionless supports which were placed at intervals of 33 feet along the length of the tape. The tapes were placed on the supports successively and were free to sag between supports. Temperatures were observed by three thermometers placed at intervals along the tape. The two comparisons, which differed by only 0.02 inch, gave in mean the equation—

$$3\times 100\text{-foot tape at } 70.4^\circ \text{ F.} = 300\text{-foot tape} + 0.28 \text{ inch at } 70.6^\circ \text{ F.}$$

The length assigned by the Missouri River Commission to the 300-foot tape used in these comparisons is

$$300.03162 \text{ feet} + 300\times 0.00000685(t-62^\circ),$$

t being the temperature F. of the tape. Assuming the two tapes to have the same co-efficient of expansion, the above equations give

100-foot tape = 100.01845 feet at 62° F.[1]

Deducting from this value two inches, or 0.16667 foot, and applying the same co-efficient of expansion as given above for the 300-foot tape, we find for the tape length used in the base measurement

$$99.85178 \text{ feet} + 0.00068(t - 62^\circ) \text{ feet.}$$

Since, as stated above, there were 244 tape lengths at an average temperature of 68° F., we have for the length of the measured line

244 × 99.85178 feet	=	24363.834 feet
Temperature correction	=+	0.996 feet
Fractional length	=+	8.833 feet
Total	=	24373.663 feet

According to a topographic map of the vicinity projected from the surveys of Prof. Streeruwitz, the elevation of the railway at Arispe is about one hundred and thirty feet less than at Sierra Blanca. Assuming the slope to be uniform between the two ends of the measured line, the grade angle would be 18′ 20″, and the corresponding grade correction is 0.35 foot. The measured line corrected for grade is, therefore, 24373.31 feet. The correction, derived from the data given above, to be applied to this length to get the line Pier-Arispe, is —95.69 feet. This gives for the latter line 24277.62 feet.

The elevation of Sierra Blanca above sea-level is given by the Southern Pacific Railway as 4,512 feet. Deducting from this one-half of the fall to Arispe, or 65 feet, we have for the mean height of the base above sea-level 4,447 feet. The base being in latitude 31° 10′, and having a mean inclination to the meridian of 71° 29′, the reduction to sea-level for the above elevation is —5.16 feet.

Collecting the several elements of the base just given, we have the following summary:

	Feet.
Length of measured line	24373.66
Correction for grade	0.35
Correction for transfer to line Pier-Arispe	95.69
Correction for elevation	5.16
Sea-level length of line Pier-Arispe	24272.46

(17) *Angles of triangulation.*—The angles of the triangulation connecting the astronomical station with the one hundred and fifth meridian and with the base of the Texas Geological Survey, were measured by

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[1] A comparison of this tape with the mural standard of the U. S. Coast and Geodetic Survey, made June 26, 1890, at a temperature of 82° F., the tape being supported without sag on the standard, gave

100-foot tape = 100.02083 at 62° F.

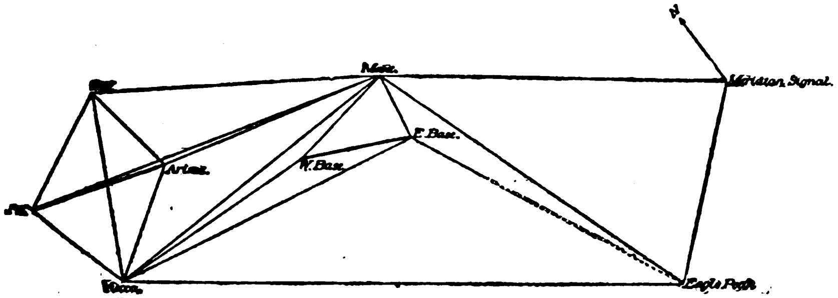
This value depends on the assumption that the mural standard and tape have the same rate of expansion. The correction for the error of this assumption and the correction for sag of tape as used at St. Louis would both diminish the discrepancy between the two values, which is now about $\frac{1}{50000}$.

Mr. A. P. Davis with a non-repeating theodolite, No. 437, made by Fauth & Co. This instrument has a circle eight inches in diameter graduated to 10′. The circle is read by two micrometer microscopes whose heads are divided to 2″. The telescope has an objective two inches in diameter and a focal length of about sixteen inches. It has a convenient device for shifting the circle, and is in all respects a high grade of instrument.

In general, four measurements of each angle were made on as many equidistant parts of the circle. By a measurement is meant the mean of two results obtained by moving the microscopes in the direction of the graduation and immediately afterwards in the opposite direction, or, vice versa, so as to eliminate twist of the instrument or its support.

The instrument was mounted in general on its heavy tripod and was protected from the sun and wind by a canvas screen. The signals used were either well defined targets of white cloth or symmetrical cairns of stones. Nearly all the stations are marked by such cairns so that they may be identified easily so long as they remain undisturbed.

Table IX, following, gives the angles and derived data used in computing the connection with the meridian and with the base of the Texas Geological Survey. As may be seen from the sketch of the triangulation below, many more angles than those used were measured.



TRIANGULATION CONNECTING SIERRA BLANCA PIER WITH 105TH MERIDIAN, EL PASO COUNTY, TEXAS.

Since our principal object was to locate the one hundred and fifth meridian well within the limits of the unavoidable errors in the astronomical longitude of the Pier, it was unnecessary to make use of all these angles as might have been done by means of a complex adjustment. Accordingly, the best chain of triangles essential to this purpose was selected and the angles of these triangles were adjusted for errors of closure simply.[1] As may be seen from the table, the maximum error of closure of these triangles is 5″.4 and the average error 2″.9. These errors of closure indicate a probable error of about ±1″.3 for a measured angle.

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[1] To this statement there is one exception, viz, in the angles at Arispe. They were subjected to a local adjustment, and the angles given in the table are the locally adjusted angles. The maximum correction from this adjustment, however, was only 0″.5.

TABLE IX.—*Principal triangles and their logarithmic sides.*

	Measured angles.			Spherical excess.	Adjusted spherical angle.			Log. sines.	Log. sides in meters.
	°	′	″	″	°	′	″		
Pier	49	01	42.2		49	01	41.3	9.877965	3.786814
Taff	65	51	57.8	0.10	65	51	56.9	9.960276	3.869125
Arispe	65	06	22.8		65	06	21.9	9.957650	3.866499
Arispe	55	43	22.7		55	43	22.0	9.917150	3.848996
Yucca	59	56	31.8	0.12	59	56	31.1	9.937276	
Pier	64	20	07.7		64	20	07.0	9.954890	3.886739
Pier	113	21	50.2		113	21	50.6	9.962844	4.080913
Taff	32	33	35.6	0.12	32	33	35.9	9.730929	
Yucca	34	04	33.2		34	04	33.6	9.748414	3.866483
Taff	32	33	35.6		32	33	35.9	9.730929	3.849014
Yucca	34	04	33.2	0.12	34	04	33.6	9.748414	
Pier	113	21	50.2		113	21	50.6	9.962844	4.080929
Taff	80	36	43.3		80	36	42.2	9.994144	4.268680
Mesa	39	48	49.9	0.49	39	48	48.8	9.806377	
Yucca	59	34	30.6		59	34	29.5	9.935654	4.210190
Taff	47	18	20.6		47	18	20.9	9.866277	4.110106
Mesa	20	26	02.4	0.18	20	26	02.7	9.542986	
Arispe	112	15	36.3		112	15	36.6	9.966364	4.210192
Arispe	126	54	38.3		126	54	39.1	9.902854	4.268674
Mesa	19	22	47.5	0.20	19	22	48.3	9.520919	
Yucca	33	42	31.9		33	42	32.8	9.744274	4.110094
Mesa	102	51	17.9		102	51	17.2	9.988977	4.515167
Eagle	33	33	09.7	1.06	33	33	09.0	9.742489	
Yucca	43	35	35.5		43	35	34.9	9.838553	4.364744
Mesa	30	52	10.1		30	52	08.3	9.710181	4.075016
Signal	88	49	40.2	0.61	88	49	38.4	9.999909	
Eagle	60	18	15.7		60	18	13.9	9.938852	4.303687
Mesa	79	40	29.8		79	40	28.0	9.992909	4.262332
E. Base	86	39	00.0	0.20	86	38	58.2	9.999257	
Yucca	13	40	35.7		13	40	34.0	9.373707	3.643130
E. Base	67	49	59.3		67	50	01.6	9.966655	3.795809
W. Base	40	39	41.8	0.07	40	39	42.1	9.813975	
Mesa	71	30	15.2		71	30	16.4	9.976968	3.806123

(18) *Connection with base of Texas Geological Survey.*—The logarithm of the base Pier-Arispe expressed in English feet, is 4.385114. Using Clarke's ratio for converting feet to meters, the corresponding logarithm of the base in meters is 3.869125. Using this logarithm and the angles of the triangles in Table IX, we find for the logarithm of the Texas base 3.806123, corresponding to 6399.16 meters.

The length of the Texas base, corrected for grade and temperature of measuring bars, as given me by Prof. Streeruwitz, is 6400.70 meters. The elevation of this base above sea-level is about the same as that of Torbert Station, which is given by the Southern Pacific Railway as 4,343 feet. The mean latitude of the base is 31° 05′, and its azimuth from the east end is 119° 05′. Hence, the reduction to sea-level is 1.33 meters, giving for the sea-level length of this base 6399.37 meters.

The discrepancy between this and the computed value given above is 0.21 meters, or $\frac{1}{32000}$ part. It is smaller than might reasonably be expected, since a change 0.5″ in the angle at Yucca of the triangle Mesa-East Base-Yucca would change the discrepancy by $\frac{1}{10000}$ part. For a precise connection of the two bases this triangle is ill-shaped. The connection suffices to show, however, that no error comparable with that in the longitude work lies in the triangulation.

(19) *Azimuth of base-line Pier-Arispe.*—The azimuth of the base-line depends on the azimuth of a meridian mark set up about one mile north of the pier. This mark was very nearly bisected by the middle line of the transit diaphragm during the period covered by the time observations May 25, 28, and 29. The average of the twelve azimuth factors of these dates (see Table III) makes the mark east of north 0″.85. Special observations, however, were made for the azimuth of the mark on May 31 with the meridian transit. Nine circumpolar stars, five at upper and four at lower culmination, were observed. The times of transit of the stars across the mid line of the instrument were recorded on the chronograph, and the small angles between the stars and the mark were measured by means of the micrometer screw of the movable V. The error of the chronometer was accurately known from its rate and previously determined error as well as from time stars observed during the course of the azimuth work. Correcting the results for inclination of horizontal axis and collimation, they gave in the mean 0″.58 east of north for the azimuth of the mark, a value not differing materially from the value derived from the time work as stated above. The angle at the pier between the meridian mark and Arispe was measured with the 8-inch theodolite described in section (17). Six measures on as many equidistant parts of the circle were made. Their mean value is 108° 30′ 06″.0. Adding to this the correction just given and 180°, we have for the adopted azimuth of the line Pier-Arispe 288° 30′ 06″.6.

(20) *Geodetic positions of points in triangulation.*—Using the triangulation given in Table IX and the initial azimuth derived above, the following geodetic positions and azimuths result:

TABLE X.—*Geodetic positions and azimuths in triangulation.*

Stations.	Latitudes.			Longitudes.			Azimuths.			Stations.	Reverse azimuths.		
	°	′	″	°	′	″	°	′	″		°	′	″
Pier	31	10	27.64	105	21	24.96	239	28	25	Taff	59	30	29
							288	30	07	Arispe	108	32	24
							352	50	14	Yucca	172	50	31
Taff	31	12	28.86	105	17	25.68	306	20	11	Mesa	126	24	27
							353	38	32	Arispe	173	38	46
							26	56	51	Yucca	206	55	04
Arispe	31	09	11.33	105	17	00.09	285	54	22	Mesa	105	58	24
							52	49	01	Yucca	232	47	01
Yucca	31	06	40.08	105	20	51.72	266	29	34	Mesa	86	35	35
							280	10	08	East Base	100	15	59
							310	05	09	Eagle Peak	130	18	15
Mesa	31	07	16.43	105	09	12.38	312	52	12	Meridian Signal	132	56	59
							343	44	20	Eagle Peak	163	46	26
							6	55	07	East Base	186	54	57
East Base	31	04	54.70	105	09	32.38	119	04	55	West Base	299	03	06
West Base	31	06	35.65	105	13	03.41							
Eagle Peak	30	55	14.41	105	03	08.13	224	03	40	Meridian Signal	44	07	21
Meridian Signal	30	59	51.56	104	59	56.49							

(21) *Positions of stones marking one hundred and fifth meridian.*—From the latitude and longitude of Meridian Signal given in Table X it appears that the one hundred and fifth meridian lies 305.51 feet west of that signal. The stones marking the meridian were actually set 295.94 feet west of Meridian Signal. This discrepancy between their actual positions and their proper positions relative to the triangulation arose in the following manner: By reason of a blunder in the field computation, made by the writer in deriving the tape length used in measuring the base, a linear error of $\frac{1}{12910}$ part (1.88 feet in length of base) was introduced into the triangulation. This error made the longitude of Meridian Signal 104° 59′ 56.60″, instead of 104° 59′ 56.49″ as given above.[1] As explained in section (22) below, however, this error of 9.57 feet in placing the meridian stones is small in comparison with the error of the initial longitude, and is entirely negligible in comparison with the unavoidable deflections of the plumb-line.

The meridian stones were set June 16, 1890, by Mr. A. P. Davis with the assistance of Prof. W. von Streeruwitz and Mr. J. A. Taff, of the Texas Geological Survey, and Col. J. R. Marmion, county surveyor of Presidio County. The stones are about one mile apart in a true north and south line, the northerly one being due east of Meridian Signal or in latitude 30° 59′ 51.56″. They are of limestone, dressed to a square cross section at their upper ends, and project a few inches above ground.

---

[1] The error of the tape length used in the field computation was $\frac{1}{3}\times\frac{1}{12}\times0.28$ foot, and was due to the omission of the term 0.28 inch from the observed equation of the 100-foot tape with the 300-foot tape of the Missouri River Commission (see section 16). The omission was not discovered until June 26, when the 100-foot tape was compared with the mural standard of the U. S. Coast and Geodetic Survey.

(22) *Probable error of position of meridian as defined by marking stones.*—It will be of some theoretical interest to state what degree of precision is attainable in fixing a meridian on the surface of the earth, and what probable error must be attributed to the position of the one hundred and fifth meridian defined by the stones set in El Paso County.

Evidently, the error in position of any meridian fixed by means of a longitude determination will depend on the errors of the longitude differences which enter into the determination. Other things being equal the uncertainty increases with the number of differences added together to make up the determination. If but one difference is involved the relative longitude of two places may be found with a probable error not greater than $0^s.02$ to $0^s.03$, or 15 to 20 feet in middle latitudes. In general, however, the longitude of a place depends on several such differences and the probable error is correspondingly greater.

In the present case we have to consider three differences of longitude, viz, the difference of St. Louis and Greenwich, Sierra Blanca and St. Louis, and Sierra Blanca and Meridian Signal. The probable error of the first of these differences is unknown, but it can hardly be less than $\pm 0^s.050$. The probable error of the second difference is given in section (16) as $\pm 0^s.022$. The probable error of the last difference, or that measured by the triangulation, may be estimated as $\frac{1}{10000}$ part of the linear distance between the meridian of the pier at Sierra Blanca and the one hundred and fifth meridian; that is, in time, $\pm 0^s.009$. Taking the square root of the sum of the squares of these probable errors, we get for the probable error of the position of the one hundred and fifth meridian as fixed on the ground

$$\pm 0^s.055 = \pm 0''.825 = \pm 72 \text{ feet.}$$

This probable error, it will be seen, is substantially the same as that of the position of the pier at Sierra Blanca.

The probable error just given takes no account of the deviation of the plumb-line at Sierra Blanca from the normal to the earth's spheroid, and the question may be asked, would the adopted position of the one hundred and fifth meridian agree with the position which might be found by geodetic connection with some other astronomical station? The answer to this question is, in all probability it would not by some hundreds of feet. The average plumb-line deflection in such mountainous regions is three to five seconds of arc, which for the latitude of Sierra Blanca means 250 feet to 440 feet. This being the case, no two determinations from different initial longitude stations could be expected to agree except within some such limits as those just assigned, even if the astronomical and geodetic work could be done with perfect accuracy. Discrepancies of this character could be avoided only by means of geodetic operations too elaborate and too costly to be employed in fixing a boundary line.

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FOSSIL INSECTS OF THE WORLD

INCLUDING

MYRIAPODS AND ARACHNIDS

BY

SAMUEL HUBBARD SCUDDER

WASHINGTON
GOVERNMENT PRINTING OFFICE
1891

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LETTER OF TRANSMITTAL

DEPARTMENT OF THE INTERIOR,
U. S. GEOLOGICAL SURVEY,
CAMBRIDGE, MASS., *July* 7, 1890.

SIR: With the view of furthering study in the too neglected field of fossil insects, I transmit herewith for publication the card catalogue of described fossil insects which I have used for twenty years and kept constantly up to date, and which has greatly facilitated my own researches. It is believed to be practically complete. At least where insects are figured, and in many other cases where they are the first or only references from a given locality, entries are given where only the genus, the family, or even the order is mentioned. This has been done because the early literature of fossil insects is essentially vague and general, but it should not for that reason be wholly overlooked; and to-day our knowledge of the occurrence of insects of a particular locality, even when of recent discovery, is not infrequently confined to statements of a general nature, which, if not brought to view or mind in a list like this, would be lost sight of, while their recognition may lead to further local investigation, to the earlier benefit of science.

It is in no sense a systematic catalogue, and except occasionally in the notes contains no immediate results of investigation. No questions of synonymy are settled. The entries are made as the authors quoted gave them, with only the corrections of spelling required; it follows that the same insect appears at several points, to which the student is referred by full cross-references, and that more than one insect may (though probably rarely does) figure under one name. In one or two such instances, where the same name has been given by inadvertence to two totally different creatures, the later one is separated from the earlier.

For convenience' sake, the entries are grouped into large sections, nearly identical with those I have employed in my systematic review of fossil insects (Bulletin 31, U. S. Geological Survey), by which method the insects from the Primary, Secondary, and Tertiary rocks are kept distinct; but otherwise the entries are purely alphabetical under the orders. It should be noticed, however, that the vague references to groups higher than genera are brought together at the beginning of each alphabet, first the most vague, and then those which permit some alphabetization. In these cases the primary or secondary alphabetization is first by authors, second by dates, and in all cases where under one entry there is more than one date the order therein is chronological.

In a previous bulletin (Bulletin 69, U. S. Geological Survey) is given a complete bibliography of the literature from which these entries are taken, and the two works are thus complementary to each other.

I am, very truly, yours,

SAMUEL H. SCUDDER.

Hon. J. W. POWELL,
Director United States Geological Survey.

INDEX TO DESCRIBED FOSSIL INSECTS.

BY SAMUEL HUBBARD SCUDDER.

I.—PALEOZOIC FOSSILS.

MYRIAPODA.

1. **Acantherpestes brodiei.** (Euphoberidæ.)

Locality: Coalbrookdale, England. **Horizon:** Carboniferous.

1882.	Scudder.	Mem. Bost. soc. nat. hist., iii: 156–157. *Pl.* 11, *fig.* 5.
1885.	"	Zittel, Handb. palaeont., i, th. ii: 729.
1886.	"	Zittel-Barrois, Traité de paléont., ii: 728.
1886.	"	Bull. U. S. geol. surv., No. 31: 16.
1890.	"	Foss. ins. N. A., i: 208–209. *Pl.* 8, *fig.* 5.

See also Euphoberia ferox, Eurypterus ferox.

2. **Acantherpestes inequalis.** (Euphoberidæ.)

Locality: Mazon Creek, Ill. **Horizon:** Carboniferous.

1890.	Scudder.	Mem. Bost. soc. nat. hist., iv: 424–425. *Pl.* 33, *figs.* 2, 4.
1890.	"	Foss. ins. N. A., i: 400–401. *Pl.* 25, *figs.* 2, 4.

3. **Acantherpestes major.** (Euphoberidæ.)

Locality: Mazon Creek, Ill. **Horizon:** Carboniferous.

1868.	Meek-Worth.	Geol. surv. Ill., iii: 559 (hypothetical).
1882.	Scudder.	Mem. Bost. soc. nat. hist., iii: 150–156. *Pl.* 10, 11, *figs.* 1–4, 6–8, 10, 11; *fig.* 5 on *p.* 151.
1883.	Lacoe.	List pal. foss. ins., 15–16.
1885.	Scudder.	Zittel, Handb. palaeont., i, th. ii: 729. *Fig.* 827 *a–c* on *p.* 728.
1886.	"	Zittel-Barrois, Traité de paléont., ii: 728. *Fig.* 914 *a–c* on *p.* 727
1886.	"	Bull. U. S. geol. surv., No. 31: 16.
1887.	Woodward.	Geol. mag., (3), iv: 2. *Fig.* 3.
1889.	Lesley.	Dict. foss. Penns., i: 1, i. *Figs.*
1889.	Miller.	N. A. geol. and pal., 572. *Fig.* 1067.
1890.	Scudder.	Mem. Bost. soc. nat. hist., iv: 424.
1890.	"	Foss. ins. N. A., i: 202–208, 400. *Pl.* 7*a*, 8, *figs.* 1–4, 6–8, 10, 11; *fig.* 5 on *p.* 203.

See also Euphoberia major.

4. **Amynilyspes wortheni.** (Euphoberidæ.)

Locality: Mazon Creek, Ill. **Horizon:** Carboniferous.

1882.	Scudder.	Mem. Bost. soc. nat. hist., iii: 178. *Pl.* 13, *figs.* 1–4, 9.
1883.	Lacoe.	List pal. foss. ins., 16.
1885.	Scudder.	Zittel, Handb. palaeont., i, th. ii: 729. *Fig.* 899.
1886.	"	Zittel-Barrois, Traité de paléont., ii: 728. *Fig.* 916.

1886.	Scudder.	Bull. U. S. geol. surv., No. 31: 16.
1889.	Lesley.	Dict. foss. Penns., i: 25, v. *Fig.*
1889.	Miller.	N. A. geol. and pal., 572. *Fig.* 1068.
1890.	Scudder.	Foss. ins. N. A., i: 230. *Pl.* 10, *figs.* 1–4, 9.

5. Anthracerpes typus.

Locality: Mazon Creek, Ill. Horizon: Carboniferous.

1865.	Meek-Worth.	Proc. acad. nat. sc. Philad., 1865: 51.
1866.	"	Worth., Geol. surv. Ill., ii: 409–410. *Pl.* 32, *figs.* 1, 1*a*.
1882.	Scudder.	Mem. Bost. soc. nat. hist., iii: 180.
1883.	Lacoe.	List pal. foss. ins., 16.
1889.	Lesley.	Dict. foss. Penns., i, p. v.
1889.	Miller.	N. A. geol. and pal., 572.
1890.	Scudder.	Foss. ins. N. A., i: 232.

6. Archidesmus macnicoli. (Archidesmidæ.)

Locality: Forfarshire, Scotland. Horizon: Lower Devonian.

1882.	Peach.	Proc. roy. phys. soc. Edinb., vii: 182–186. *Pl.* 2, *fig.* 2, 2 *a–d*.
1882.	"	Foss. myr. Forfarsh., 5–9. *Pl.*, *figs.* 2, 2 *a–d*.
1885.	Scudder.	Zittel, Handb. palaeont., i, th. ii: 728. *Fig.* 896.
1886.	"	Zittel-Barrois, Traité de paléont., ii: 727. *Fig.* 913.
1886.	"	Bull. U. S. geol. surv., No. 31: 15.

7. Archiulus ———. (2 sp.). (Archiulidæ.)

Locality: Joggins, Nova Scotia. Horizon: Carboniferous.

1883.	Scudder.	Phil. trans., 1882: 649.

8. Archiulus ———. (Archiulidæ.)

Locality: Mazon Creek, Ill. Horizon: Carboniferous.

1890.	Scudder.	Mem. Bost. soc. nat. hist., iv: 437. *Pl.* 37, *fig.* 1.
1890.	"	Foss. ins. N. A., i: 413. *Pl.* 29, *fig.* 1.

9. Archiulus (Julus) brassi. (Archiulidæ.)

Locality: Lehbach, Germany. Horizon: Lower Dyas.

1885.	Scudder.	Zittel, Handb. palaeont., i, th. ii: 730. *Fig.* 901.
1886.	"	Zittel-Barrois, Traité de paléont., ii: 729. *Fig.* 917.

See also Julus brassi.

Archiulus dawsoni. See Xylobius dawsoni.

10. Archiulus glomeratus. (Archiulidæ.)

Locality: Mazon Creek, Ill. Horizon: Carboniferous.

1890.	Scudder.	Mem. Bost. soc. nat. hist., iv: 436–437. *Pl.* 37, *figs.* 2, 3.
1890.	"	Foss. ins. N. A., i: 412–413. *Pl.* 29, *figs.* 2, 3.

11. Archiulus xylobioides. (Archiulidæ.)

Locality: Joggins, Nova Scotia. Horizon: Carboniferous.

1868.	Scudder.	Dawson, Acad. geol., 2d ed., 496.
1869	"	Quart. journ. geol. soc. Lond., xxv: 441 (undescr.).
1873.	"	Mem. Bost. soc. nat. hist., ii: 236–238.
1878.	"	Suppl. note foss. Myr., 1. *Figs.* 5–7.
1878.	"	Mem. Bost. soc. nat. hist., ii: 561–562. *Figs.* 5–7.

1878.	Dawson.	Acad. geol., suppl. 2d ed., 56. *Fig.* 11 *e–g*.
1880.	"	Chain of life, 145. *Fig.* 126 *b*.
1883.	Lacoe.	List pal. foss. ins., 16–17.
1889.	Lesley.	Dict. foss. Penns., i, p. vii.
1889.	Miller.	N. A. geol. and pal., 573. *Fig.* 1069.
1890.	Scudder.	Foss. ins. N. A., i: 26–28, 31–32. *Figs.* 5–7.

12. Arthropleurion inermis.

Locality: Saarbrück, Germany. Horizon: Carboniferous.

1877.	Goldenberg.	Fauna saræp. foss., ii: 48–49 (Athropleurion). *Pl. fig.* 2, 30.
1882.	Scudder.	Mem. Bost. soc. nat. hist., iii: 180.
1890.	"	Foss. ins. N. A., i: 232.

Athropleurion inermis. See Arthropleurion inermis.

13. Chonionotus lithanthracis. (Euphoberidæ.)

Locality: Jägersfreude, Germany. Horizon: Carboniferous.

1854.	Jordan.	Palaeontogr., iv: 12–13. *Pl.* 2, *fig.* 3.
1867.	Goldenberg.	Vorweltl. fauna steink. Saarbr., 21.
1873.	"	Faun. saræp. foss., i: 21. *Pl.* 1, *fig.* 19.
1882.	Scudder.	Mem. Bost. soc. nat. hist., iii: 180. *Pl.* 11, *fig.* 9.
1885.	"	Zittel, Handb. palaeont., i, th. ii: 729 (lithanthraca).
1886.	"	Zittel-Barrois, Traité de paléont., ii: 728.
1886.	"	Bull. U. S. geol. surv., No. 31: 16.
1890.	"	Foss. ins. N. A., i: 232. *Pl.* 8, *fig.* 9.

14. Eileticus æqualis. (Eoscolopendridæ.)

Locality: Mazon Creek, Ill. Horizon: Carboniferous.

1890.	Scudder.	Mem. Bost. soc. nat. hist., iv: 421. *Pl.* 38, *figs.* 6–9.
1890.	"	Foss. ins. N. A., i: 397. *Pl.* 30, *figs.* 6–9.

15. Eileticus anthracinus. (Eoscolopendridæ.)

Locality: Mazon Creek, Ill. Horizon: Carboniferous.

1882.	Scudder.	Mem. Bost. soc. nat. hist., iii: 179. *Pl.* 13, *figs.* 5, 6.
1883.	Lacoe.	List pal. foss. ins., 17.
1885.	Scudder.	Zittel, Handb. palæont., i, th. ii: 729.
1886.	"	Zittel-Barrois, Traité de paléont., ii: 728.
1886.	"	Bull. U. S. geol. surv., No. 31: 16.
1889.	Miller.	N. A. geol. and pal., 573.
1890.	Scudder	Mem. Bost. soc. nat. hist., iv: 420–421. *Pl.* 38, *fig.* 5.
1890.	"	Foss. ins. N. A., i: 231, 396–397. *Pl.* 10, *figs.* 5, 6; *Pl.* 30, *fig.* 5.

16. Eojulus fragilis. (Archiulidæ?)

Locality: Rakonitz, Bohemia. Horizon: Carboniferous.

1885.	Kušta.	Neue foss. arthrop. Rakonitz, 4–5. *Fig.*
1885.	"	Sitzungsb. k. böhm. gesellsch. wiss., 1885: 593–594. *Fig.*

17. Euphoberia ———. (Euphoberidæ.)

Locality: Mazon Creek, Ill. Horizon: Carboniferous.

1890.	Scudder.	Mem. Bost. soc. nat. hist., iv: 435.
1890.	"	Foss. ins. N. A., i: 411.

18. **Euphoberia anguilla.** (Euphoberidæ.)

Locality: Mazon Creek, Ill. Horizon: Carboniferous.

1882.	Scudder.	Mem. Bost. soc. nat. hist., iii: 177. *Pl.* 12, *fig.* 20.
1883.	Lacoe.	List pal. foss. ins., 17.
1889.	Lesley.	Dict. foss. Penns., i, p. xxiii.
1889.	Miller.	N. A. geol. and pal., 573.
1890.	Scudder.	Mem. Bost. soc. nat. hist., iv: 426, 435–436. *Pl.* 36, *fig.* 3.
1890.	“	Foss. ins. N. A., i: 229, 402, 411–412. *Pl.* 9, *fig.* 20; *Pl.* 28, *fig.* 3.

19. **Euphoberia armigera.** (Euphoberidæ.)

Locality: Mazon Creek, Ill. Horizon: Carboniferous.

1868.	Meek-Worth.	Amer. journ. sc. arts, (2), xlvi: 25–27.
1868.	“	Worth., Geol. surv. Ill., iii: 556–558. *Figs. A–D.*
1876.	Roemer.	Lethæa geogn. (Euphorberia). *Pl.* 47, *fig.* 19.
1879.	Nicholson.	Manual palæont., 2d ed., i: 404. *Fig.* 255.
1882.	Scudder.	Mem. Bost. soc. nat. hist., iii: 160–167. *Pl.* 12, *figs.* 1–3, 5, 6, 13; *Pl.* 13, *figs.* 7, 8, 10; *figs.* 6, 7 on *p.* 161.
1883.	Lacoe.	List pal. foss. ins., 17.
1885.	Scudder.	Zittel, Handb. palaeont., i, th. ii: 729. *Fig.* 898.
1886.	“	Zittel-Barrois, Traité de paléont., ii: 728. *Fig.* 915.
1889.	Nicholson.	Man. palæont., 3d ed., i: 584. *Fig.* 439.
1889.	Miller.	N. A. geol. and pal., 573. *Figs.* 1070, 1071 (not 1072).
1890.	Scudder.	Mem. Bost. soc. nat. hist., iv: 426, 427. *Pl.* 34, *figs.* 2, 4, 8; *Pl.* 35, *fig.* 3.
1890.	“	Foss. ins. N. A., i: 212–219, 402, 403. *Pl.* 9, *figs.* 1–3, 5, 6, 13; *Pl.* 10, *figs.* 7, 8, 10; *Pl.* 26, *figs* 2, 4, 8; *Pl.* 27, *fig.* 3; *figs.* 6, 7 on *p.* 213.

20. **Euphoberia brownii.** (Euphoberidæ.)

Locality: Kilmaurs, Scotland. Horizon: Carboniferous.

1871.	Woodward.	Geol. mag., viii: 102–104. *Pl.* 3, *fig.* 6 *a–c*.
1882.	Scudder.	Mem. Bost. soc. nat. hist., iii: 167–168. *Pl.* 12, *figs.* 7, 8, 21.
1890.	“	Foss. ins. N. A., i: 219–220. *Pl.* 9, *figs.* 7, 8, 21.

21. **Euphoberia carri.** (Euphoberidæ.)

Locality: Mazon Creek, Ill. Horizon: Carboniferous.

1882.	Scudder.	Mem. Bost. soc. nat. hist., iii: 171–174. *Pl.* 12, *figs.* 4, 9–12, 14–19; *Pl.* 13, *figs.* 16–18.
1883.	Lacoe.	List pal. foss. ins., 18.
1889.	Lesley.	Dict. foss. Penns., i, p. xxiv.
1889.	Miller.	N. A. geol. and pal., 573.
1890.	Scudder.	Mem. Bost. soc. nat. hist., iv: 426, 429.
1890.	“	Foss. ins. N. A., i: 223–226, 402, 405. *Pl.* 9, *figs* 4, 9–12, 14–19; *Pl.* 10, *figs.* 16–18.

22. **Euphoberia cuspidata.** (Euphoberidæ.)

Locality: Mazon Creek, Ill. Horizon: Carboniferous.

1890.	Scudder.	Mem. Bost. soc. nat. hist., iv: 426, 429–430. *Pl.* 34, *figs.* 3, 7.
1890.	“	Foss. ins. N. A., i: 402, 405–406. *Pl.* 26, *figs.* 3, 7.

23. **Euphoberia ferox.** (Euphoberidæ.)

Localities: Tipton, N. Straffordshire, Coalbrookdale, Sedgley, Grassington, Coseley, Yorkshire, England. Horizon: Carboniferous.

1845.	Brodie.	Foss. ins. sec. rocks Engl., 105, 115 (“caterpillar”). *Pl.* 1, *fig.* 11.
1845.	Westwood.	Brodie, Foss. ins. sec. rocks Engl., xvii–xviii (“caterpillar”).

1868. Meek-Worth. Amer. journ. sc. arts, (2), xlvi: 26–27.
1873. Woodward. Geol. mag., x: 109–112. *Figs.* 8, 10.
1873. " Brit. foss. arthr., 6–9. *Figs.* 8, 10.
1882. Scudder. Mem. Bost. soc. nat. hist., iii: 157–158. *Pl.* 12, *fig.* 23.
1887. Woodward. Geol. mag., (3), iv: 6–10. *Pl.* 1, *figs.* 1–13; *figs.* 1–3 in text.
1887. " Geol. mag., (3), iv: 116–117. *Figs.* 1, 2 in text.
1890. Scudder. Foss. ins. N. A., i: 209–210. *Pl.* 9, *fig.* 23.
See also Acantherpestes brodiei, Eurypterus ferox.

24. Euphoberia flabellata. (Euphoberidæ.)

Locality: Mazon Creek, Ill. Horizon: Carboniferous.

1882. Scudder. Mem. Bost. soc. nat. hist., iii: 174–177. *Pl.* 13, *fig.* 15.
1883. Lacoe. List pal. foss. ins., 18.
1889. Miller. N. A. geol. and pal., 573.
1890. Scudder Mem. Bost. soc. nat. hist., iv: 426.
1890. " Foss. ins. N. A., i: 226–229, 402. *Pl.* 10, *fig.* 15.

25. Euphoberia granosa. (Euphoberidæ.)

Locality: Mazon Creek, Ill. Horizon: Carboniferous.

1882. Scudder. Mem. Bost. soc. nat. hist., iii: 168–170. *Pl.* 12, *figs.* 22, 24–26; *Pl.* 13, *fig.* 13; *fig.* 8 in text.
1883. Lacoe. List pal. foss. ins., 18.
1889. Lesley. Dict. foss. Penns., i, p. xxiv.
1889. Miller. N. A. geol. and pal., 573. *Fig.* 1072.
890. Scudder. Mem. Bost. soc. nat. hist., iv: 426, 427–428. *Pl.* 34, *figs.* 5, 6; *Pl.* 36, *fig.* 2.
1890. " Foss. ins. N. A., i: 220–222, 402, 403–404. *Pl.* 9, *figs.* 22, 24–26; *Pl.* 10, *fig.* 13; *Pl.* 26, *figs.* 5, 6; *Pl.* 28, *fig.* 2; *fig.* 8 on *p.* 220.

26. Euphoberia horrida. (Euphoberidæ.)

Locality: Mazon Creek, Ill. Horizon: Carboniferous.

882. Scudder. Mem. Bost. soc. nat. hist., iii: 158–160. *Pl.* 13, *figs.* 11, 12, 14.
883. Lacoe. List pal. foss. ins., 18.
889. Lesley. Dict. foss. Penns., i, p. xxiv.
889. Miller. N. A. geol. and pal., 573.
890. Scudder. Mem. Bost. soc. nat. hist., iv: 426.
890. " Foss. ins. N. A., i: 210–212, 402. *Pl.* 10, *figs.* 11, 12, 14.

27. Euphoberia hystricosa. (Euphoberidæ.)

Locality: Mazon Creek, Ill. Horizon: Carboniferous.

890. Scudder. Mem. Bost. soc. nat. hist., iv: 426. *Pl.* 33, *figs.* 1, 3.
890. " Foss. ins. N. A., i: 402. *Pl.* 25, *figs.* 1, 3.

28. Euphoberia major. (Euphoberidæ.)

Locality: Mazon Creek, Ill. Horizon: Carboniferous.

868. Meek-Worth. Amer. journ. sc. arts, (2), xlvi: 25–27.
868. " Worth., Geol. surv. Ill., iii: 558–559. *Fig.*
872? Woodward. Monogr. Merost., 172. *Fig.*
873. " Geol. mag., x: iii. *Fig.* 11.
See also Acantherpestes major.

29. Euphoberia simplex. (Euphoberidæ.)

Locality: Mazon Creek, Ill. Horizon: Carboniferous.

890. Scudder. Mem. Bost. soc. nat. hist., iv: 426, 432–433. *Pl.* 35, *figs.* 2, 6, 7.
890. " Foss. ins. N. A., i: 402, 408–409. *Pl.* 27, *figs.* 2, 6, 7.

18. **Euphoberia anguilla.** (Euphoberidæ.)

Locality: Mazon Creek, Ill. **Horizon:** Carboniferous.

1882.	**Scudder.**	Mem. Bost. soc. nat. hist., iii: 177. *Pl.* 12, *fig.* 20.
1883.	**Lacoe.**	List pal. foss. ins., 17.
1889.	**Lesley.**	Dict. foss. Penns., i, p. xxiii.
1889.	**Miller.**	N. A. geol. and pal., 573.
1890.	**Scudder.**	Mem. Bost. soc. nat. hist., iv: 426, 435–436. *Pl.* 36, *fig.* 3.
1890.	"	Foss. ins. N. A., i: 229, 402, 411–412. *Pl.* 9, *fig.* 20; *Pl.* 28, *fig.* 3.

19. **Euphoberia armigera.** (Euphoberidæ.)

Locality: Mazon Creek, Ill. **Horizon:** Carboniferous.

1868.	**Meek-Worth.**	Amer. journ. sc. arts, (2), xlvi: 25–27.
1868.	"	Worth., Geol. surv. Ill., iii: 556–558. *Figs. A–D.*
1876.	**Roemer.**	Lethæa geogn. (Euphorberia). *Pl.* 47, *fig.* 19.
1879.	**Nicholson.**	Manual palæont., 2d ed., i: 404. *Fig.* 255.
1882.	**Scudder.**	Mem. Bost. soc. nat. hist., iii: 160–167. *Pl.* 12, *figs.* 1–3, 5, 6, 13; *Pl.* 13, *figs.* 7, 8, 10; *figs.* 6, 7 on *p.* 161.
1883.	**Lacoe.**	List pal. foss. ins., 17.
1885.	**Scudder.**	Zittel, Handb. palaeont., i, th. ii: 729. *Fig.* 898.
1886.	"	Zittel-Barrois, Traité de paléont., ii: 728. *Fig.* 915.
1889.	**Nicholson.**	Man. palæont., 3d ed., i: 584. *Fig.* 439.
1889.	**Miller.**	N. A. geol. and pal., 573. *Figs.* 1070, 1071 (not 1072).
1890.	**Scudder.**	Mem. Bost. soc. nat. hist., iv: 426, 427. *Pl.* 34, *figs.* 2, 4, 8; *Pl.* 35, *fig.* 3.
1890.	"	Foss. ins. N. A., i: 212–219, 402, 403. *Pl.* 9, *figs.* 1–3, 5, 6, 13; *Pl.* 10, *figs.* 7, 8, 10; *Pl.* 26, *figs* 2, 4, 8; *Pl.* 27, *fig.* 3; *figs.* 6, 7 on *p.* 213.

20. **Euphoberia brownii.** (Euphoberidæ.)

Locality: Kilmaurs, Scotland. **Horizon:** Carboniferous.

1871.	**Woodward.**	Geol. mag., viii: 102–104. *Pl.* 3, *fig.* 6 *a–c*.
1882.	**Scudder.**	Mem. Bost. soc. nat. hist., iii: 167–168. *Pl.* 12, *figs.* 7, 8, 21.
1890.	"	Foss. ins. N. A., i: 219–220. *Pl.* 9, *figs.* 7, 8, 21.

21. **Euphoberia carri.** (Euphoberidæ.)

Locality: Mazon Creek, Ill. **Horizon:** Carboniferous.

1882.	**Scudder.**	Mem. Bost. soc. nat. hist., iii: 171–174. *Pl.* 12, *figs.* 4, 9–12, 14–19; *Pl.* 13, *figs.* 16–18.
1883.	**Lacoe.**	List pal. foss. ins., 18.
1889.	**Lesley.**	Dict. foss. Penns., i, p. xxiv.
1889.	**Miller.**	N. A. geol. and pal., 573.
1890.	**Scudder.**	Mem. Bost. soc. nat. hist., iv: 426, 429.
1890.	"	Foss. ins. N. A., i: 223–226, 402, 405. *Pl.* 9, *figs* 4, 9–12, 14–19; *Pl.* 10, *figs.* 16–18.

22. **Euphoberia cuspidata.** (Euphoberidæ.)

Locality: Mazon Creek, Ill. **Horizon:** Carboniferous.

1890.	**Scudder.**	Mem. Bost. soc. nat. hist., iv: 426, 429–430. *Pl.* 34, *figs.* 3, 7.
1890.	"	Foss. ins. N. A., i: 402, 405–406. *Pl.* 26, *figs.* 3, 7.

23. **Euphoberia ferox.** (Euphoberidæ.)

Localities: Tipton, N. Straffordshire, Coalbrookdale, Sedgley, Grassington, Coseley, Yorkshire, England. **Horizon:** Carboniferous.

1845.	**Brodie.**	Foss. ins. sec. rocks Engl., 105, 115 ("caterpillar"). *Pl.* 1, *fig.* 11.
1845.	**Westwood.**	Brodie, Foss. ins. sec. rocks Engl., xvii–xviii ("caterpillar").

1868.	Meek-Worth.	Amer. journ. sc. arts, (2), xlvi : 26–27.
1873.	Woodward.	Geol. mag., x : 109–112. *Figs.* 8, 10.
1873.	"	Brit. foss. arthr., 6–9. *Figs.* 8, 10.
1882.	Scudder.	Mem. Bost. soc. nat. hist., iii : 157–158. *Pl.* 12, *fig.* 23.
1887.	Woodward.	Geol. mag., (3), iv : 6–10. *Pl.* 1, *figs.* 1–13; *figs.* 1–3 in text.
1887.	"	Geol. mag., (3), iv : 116–117. *Figs.* 1, 2 in text.
1890.	Scudder.	Foss. ins. N. A., i : 209–210. *Pl.* 9, *fig.* 23.

See also Acantherpestes brodiei, Eurypterus ferox.

24. **Euphoberia flabellata.** (Euphoberidæ.)

Locality: Mazon Creek, Ill. **Horizon:** Carboniferous.

1882.	Scudder.	Mem. Bost. soc. nat. hist., iii : 174–177. *Pl.* 13, *fig.* 15.
1883.	Lacoe.	List pal. foss. ins., 18.
1889.	Miller.	N. A. geol. and pal., 573.
1890.	Scudder	Mem. Bost. soc. nat. hist., iv : 426.
1890.	"	Foss. ins. N. A., i : 226–229, 402. *Pl.* 10, *fig.* 15.

25. **Euphoberia granosa.** (Euphoberidæ.)

Locality: Mazon Creek, Ill. **Horizon:** Carboniferous.

1882.	Scudder.	Mem. Bost. soc. nat. hist., iii : 168–170. *Pl.* 12, *figs.* 22, 24–26; *Pl.* 13, *fig.* 13; *fig.* 8 in text.
1883.	Lacoe.	List pal. foss. ins., 18.
1889.	Lesley.	Dict. foss. Penns., i, p. xxiv.
1889.	Miller.	N. A. geol. and pal., 573. *Fig.* 1072.
1890.	Scudder.	Mem. Bost. soc. nat. hist., iv : 426, 427–428. *Pl.* 34, *figs.* 5, 6; *Pl.* 36, *fig.* 2.
1890.	"	Foss. ins. N. A., i : 220–222, 402, 403–404. *Pl.* 9, *figs.* 22, 24–26; *Pl.* 10, *fig.* 13; *Pl.* 26, *figs.* 5, 6; *Pl.* 28, *fig.* 2; *fig.* 8 on *p.* 220.

26. **Euphoberia horrida.** (Euphoberidæ.)

Locality: Mazon Creek, Ill. **Horizon:** Carboniferous.

1882.	Scudder.	Mem. Bost. soc. nat. hist., iii : 158–160. *Pl.* 13, *figs.* 11, 12, 14.
1883.	Lacoe.	List pal. foss. ins., 18.
1889.	Lesley.	Dict. foss. Penns., i, p. xxiv.
1889.	Miller.	N. A. geol. and pal., 573.
1890.	Scudder.	Mem. Bost. soc. nat. hist., iv : 426.
1890.	"	Foss. ins. N. A., i : 210–212, 402. *Pl.* 10, *figs.* 11, 12, 14.

27. **Euphoberia hystricosa.** (Euphoberidæ.)

Locality: Mazon Creek, Ill. **Horizon:** Carboniferous.

1890.	Scudder.	Mem. Bost. soc. nat. hist., iv : 426. *Pl.* 33, *figs.* 1, 3.
1890.	"	Foss. ins. N. A., i : 402. *Pl.* 25, *figs.* 1, 3.

28. **Euphoberia major.** (Euphoberidæ.)

Locality: Mazon Creek, Ill. **Horizon:** Carboniferous.

1868.	Meek-Worth.	Amer. journ. sc. arts, (2), xlvi : 25–27.
1868.	"	Worth., Geol. surv. Ill., iii : 558–559. *Fig.*
1872?	Woodward.	Monogr. Merost., 172. *Fig.*
1873.	"	Geol. mag., x : iii. *Fig.* 11.

See also Acantherpestes major.

29. **Euphoberia simplex.** (Euphoberidæ.)

Locality: Mazon Creek, Ill. **Horizon:** Carboniferous.

1890.	Scudder.	Mem. Bost. soc. nat. hist., iv : 426, 432–433. *Pl.* 35, *figs.* 2, 6, 7.
1890.	"	Foss. ins. N. A., i : 402, 408–409. *Pl.* 27, *figs.* 2, 6, 7.

30. **Euphoberia spinulosa.** (Euphoberidæ.)

Locality: Mazon Creek, Ill. Horizon: Carboniferous.

1890. Scudder. Mem. Bost. soc. nat. hist., iv: 426, 430–432. *Pl.* 34, *fig.* 1; *Pl.* 35, *figs.* 1, 4, 5; *Pl.* 36, *figs.* 7, 8.
1890. " Foss. ins. N. A., i: 402, 406–408. *Pl.* 26, *fig.* 1; *Pl.* 27, *figs.* 1, 4, 5; *Pl.* 28, *figs.* 7, 8.

31. **Euphoberia tracta.** (Euphoberidæ.)

Locality: Mazon Creek, Ill. Horizon: Carboniferous.

1890. Scudder. Mem. Bost. soc. nat. hist., iv: 426, 433–435. *Pl.* 36, *figs.* 1, 4–6.
1890. " Foss. ins. N. A., i: 402, 409–411. *Pl.* 28, *figs.* 1, 4–6.

Euphorberia armigera. See Euphoberia armigera.

32. **Eurypterus ferox.** (Euphoberidæ.)

Locality: Tipton, N. Staffordshire, England. Horizon: Carboniferous.

1863. Salter. Quart. journ. geol. soc. Lond., xix: 86–87. *Fig.* 8 on *p.* 84.
See also Euphoberia ferox, Acantherpestes brodiei.

33. **Ilyodes divisa.** (Eoscolopendridæ.)

Locality: Mazon Creek, Ill. Horizon: Carboniferous.

1890. Scudder. Mem. Bost. soc. nat. hist., iv: 422–423. *Pl.* 38, *fig.* 1.
1890. " Foss. ins. N. A., i: 398–399. *Pl.* 30, *fig.* 1.

34. **Ilyodes elongata.** (Eoscolopendridæ.)

Locality: Mazon Creek, Ill. Horizon: Carboniferous.

1890. Scudder. Mem. Bost. soc. nat. hist., iv: 423. *Pl.* 38, *fig.* 2.
1890. " Foss. ins. N. A., i: 399. *Pl.* 30, *fig.* 2.

35. **Julus brassi.** (Archiulidæ?)

Locality: Lehbach, Germany. Horizon: Lower Dyas.

1868. Dohrn. Verhandl. naturh. ver. preuss. Rheinl., (3), v: 335–336. *Pl.* 6, *fig.* 2 *a–b*.
1877. Goldenberg. Fauna saræp. foss., ii: 33, 51.
1882. Scudder. Mem. Bost. soc. nat. hist., iii: 148.
1885. " Zittel, Handb. palæont., i, th. ii: 730.
1886. " Zittel-Barrois, Traité de paléont., ii: 729.
1886. " Bull. U. S. geol. surv., No. 31: 17.
1890. " Foss. ins. N. A., i: 200.
See also Archiulus (Julus) brassi.

36. **Julus constans.** (Archiulidæ?)

Locality: Nyřan, Bohemia. Horizon: Permian.

1879. Fritsch. Fauna d. gaskohle Böhmens, i: 31.

37. **Julus costulatus.** (Archiulidæ?)

Locality: Nyřan, Bohemia. Horizon: Permian.

1879. Fritsch. Fauna d. gaskohle Böhmens, i: 31.

38. **Julus pictus.** (Archiulidæ?)

Localities: Kounová, Zaboř, Bohemia. Horizon: Permian.

1879. Fritsch. Fauna d. gaskohle Böhmens, i: 31.

39. Kampecaris forfarensis. (Archidesmidæ.)

Locality: Forfarshire, Scotland. Horizon: Lower Devonian.

1856.	Page.	Adv. text book geol., 135 (genus only). *Fig.* 4.
[1865.	Salt.-Woodw.	Chart foss. Crust.]
1882.	Peach.	Proc. roy. phys. soc. Edinb., vii: 179–182. *Pl.* 2, *figs.* 1, 1 *a–f*.
1882.	"	Foss. myr. Forfarsh., 3–5. *Pl.*, *figs.* 1, 1 *a–f*.
1885.	Scudder.	Zittel, Handb. palaeont., i, th. ii: 728.
1886.	"	Zittel-Barrois, Traité de paléont., ii: 727.
1886.	"	Bull. U. S. geol. surv., No. 31: 15.

40. Latzelia primordialis. (Gerascutigeridæ.)

Locality: Mazon Creek, Ill. Horizon: Carboniferous.

1890.	Scudder.	Mem. Bost. soc. nat. hist., iv: 419. *Pl.* 38, *fig.* 3.
1890.	"	Foss. ins. N. A., i: 395. *Pl.* 30, *fig.* 3.

41. Palæocampa anthrax. (Protosygnatha.)

Locality: Morris, Ill. Horizon: Carboniferous.

1865.	Meek-Worth.	Proc. acad. nat. sc. Philad., 1865: 52.
1866.	"	Worth., Geol. surv. Ill., ii: 410–411. *Pl.* 32, *fig.* 3.
1868.	"	Worth., Geol. surv. Ill., iii: 565.
1868.	Scudder.	Geol. mag., v: 218.
1882.	"	Amer. jour. sc., (3), xxiv: 161–170.
1883.	Lacoe.	List pal. foss. ins., 18–19.
1884.	Scudder.	Mem. Bost. soc. nat. hist., iii: 283–291, 293–297. *Pl.* 26, *figs.* 1–9.
1885.	"	Zittel, Handb. palaeont., i, th. ii: 726. *Fig.* 894*ab*.
1886.	"	Zittel-Barrois, Traité de paléont., ii: 725. *Fig.* 911*ab*.
1886.	"	Bull. U. S. geol. surv., No. 31: 14.
1889.	Miller.	N. A. geol. and pal., 573.
1889.	Nicholson	Man. palæont., 3d ed., i: 583. *Fig.* 438.
1890.	Lesley.	Dict. foss. Penns., ii: 579. *Fig.*
1890.	Scudder.	Foss. ins. N. A., i: 247–255, 257–260. *Pl.* 12, *figs.* 1–9.

42. Palæojulus dyadicus.

Locality: Chemnitz, Saxony. Horizon: Dyas.

1872.	Geinitz.	Sitzungsb. naturw. gesellsch. Isis, 1872: 128–131. *Pl.* 1, *figs.* 4–7.
1877.	Goldenberg.	Fauna saraep. foss., ii: 34, 51.
1878.	Sterzel.	Neues jahrb. min., 1878: 729–731 (Cyclopteris).
1878.	Geinitz.	Neues jahrb. min., 1878: 733.
1878.	Sterzel.	Zeitschr. deutsch. geol. gesellsch., xxx: 417–426. *Pl.* 19, *figs.* 1–11.
1880.	"	Zeitschr. deutsch. geol. gesellsch., xxxii: 1–2.
1885.	Scudder.	Zittel, Handb. palaeont., i, th. ii: 730.
1886.	"	Zittel-Barrois, Traité de paléont., ii: 729.
1886.	"	Bull. U. S. geol. surv., No. 31: 17.

[Not a Myriapod.]

43. Palenarthrus impressus. (Eoscolopendridæ.)

Locality: Mazon Creek, Ill. Horizon: Carboniferous.

1890.	Scudder.	Mem. Bost. soc. nat. hist., iv: 422. *Pl.* 38, *fig.* 4.
1890.	"	Foss. ins. N. A., i: 398. *Pl.* 30, *fig.* 4.

44. Trichiulus ammonitiformis.

Locality: Mazon Creek, Ill. Horizon: Carboniferous.

1883.	Scudder.	MSS.
1883.	Lacoe.	List pal. foss. ins., 19.

1884.	Scudder.	Mem. Bost. soc. nat. hist., iii: 292–293. *Pl.* 27, *fig.* 4.
1886.	"	Mem. Bost. soc. nat. hist., iii: 438 (fern).
1889.	Miller.	N. A. geol. and pal., 573.
1890.	Scudder.	Foss. ins. N. A., i: 256–257, 330. *Pl.* 13, *fig.* 4.

[Not a Myriapod.]

45. **Trichiulus nodulosus.**

Locality: Mazon Creek, Ill. Horizon: Carboniferous.

1883.	Scudder.	MSS.
1883.	Lacoe.	List pal. foss. ins., 19.
1884.	Scudder.	Mem. Bost. soc. nat. hist., iii: 292. *Pl.* 27, *figs.* 1, 3.
1886.	"	Mem. Bost. soc. nat. hist., iii: 438 (fern).
1889.	Miller.	N. A. geol. and pal., 573.
1890.	Scudder.	Foss. ins. N. A., i: 256, 330. *Pl.* 13, *figs.* 1, 3.

[Not a Myriapod.]

46. **Trichiulus villosus.**

Locality: Mazon Creek, Ill. Horizon: Carboniferous.

1883.	Scudder.	MSS.
1883.	Lacoe.	List pal. foss. ins., 19.
1884.	Scudder.	Mem. Bost. soc. nat. hist., iii: 291–292. *Pl.* 27, *fig.* 2.
1885.	"	Zittel, Handb. palaeont., i, th. ii: 729. *Fig.* 900.
1889.	Miller.	N. A. geol. and pal., 574.
1890.	Scudder.	Foss. ins. N. A., i: 255–256, 330 (fern). *Pl.* 13, *fig.* 2.

[Not a Myriapod.]

47. **Xylobius dawsoni.** (Archiulidæ.)

Locality: Joggins, Nava Scotia. Horizon: Carboniferous.

1868.	Scudder.	Dawson, Acad. geol., 2d ed., 496.
1869.	"	Quart. journ. geol. soc. Lond., xxv: 441 (undescr.).
1873.	"	Mem. Bost. soc. nat. hist., ii: 235–236.
1878.	"	Mem. Bost. soc. nat. hist., ii: 561. *Fig.* 4.
1878.	"	Suppl. note foss. Myr., 1. *Fig.* 4.
1878.	Dawson.	Acad. geol., suppl. 2d ed., 56 (Archiulus). *Fig.* 11*d*.
1883.	Lacoe.	List pal. foss. ins., 19.
1889.	Miller.	N. A. geol. and pal., 574.
1890.	Scudder.	Foss. ins. N. A., i: 25–26, 31. *Fig.* 4.

Xylobius farctus. See Xylobius fractus.

48. **Xylobius fractus.** (Archiulidæ.)

Locality: Joggins, Nova Scotia. Horizon: Carboniferous.

1868.	Scudder.	Dawson, Acad. geol., 2d ed., 496.
1869.	"	Quart. journ. geol. soc. Lond., xxv: 441 (undescr.).
1873.	"	Mem. Bost. soc. nat. hist., ii: 234–235.
1878.	"	Mem. Bost. soc. nat. hist., ii: 561. *Fig.* 3.
1878.	"	Suppl. note foss. Myr., 1. *Fig.* 3.
1878.	Dawson.	Acad. geol., suppl. 2d ed., 56 (farctus). *Fig.* 11*c*.
1880.	"	Chain of life, 145 (farctus). *Fig.* 126*c*.
1882.	Scudder.	Mem. Bost. soc. nat. hist., iii: 148.
1883.	Lacoe.	List pal. foss. ins., 19.
1889.	Miller.	N. A. geol. and pal., 574.
1890.	Scudder.	Foss. ins. N. A., i: 24–25, 31, 200. *Fig.* 3 on *p.* 31.

49. **Xylobius frustulentus.** (Archiulidæ.)

Locality: Mazon Creek, Ill. Horizon: Carboniferous.

1890.	Scudder.	Mem. Bost. soc. nat. hist., iv: 438–439. *Pl.* 37, *figs.* 4–6.
1890.	“	Foss. ins. N. A., i: 414–415. *Pl.* 29, *figs.* 4–6.

Xylobius mazonius. See Xylobius mazonus.

50. **Xylobius mazonus.** (Archiulidæ.)

Locality: Mazon Creek, Ill. Horizon: Carboniferous.

1885.	Scudder.	Zittel, Handb. palaeont., i, th. ii: 730. *Fig.* 902*b*.
1886.	“	Zittel-Barrois, Traité de paléont., ii: 729. *Fig.* 918*b*.
1889.	Miller.	N. A. geol. and pal., 574 (mazonius).
1890.	Scudder.	Mem. Bost. soc. nat. hist., iv: 439–440. *Pl.* 37, *figs.* 7–11.
1890.	“	Foss. ins. N. A., i: 415–416. *Pl.* 29, *figs.* 7–11.

51. **Xylobius sigillariæ.** (Archiulidæ.)

Localities: Joggins, N. S., Bradley, Cooper's Bridge, Huddersfield, England; Kilmaurs, near Glasgow, Scotland. Horizon: Carboniferous.

1859.	Dawson.	Quart. journ. geol. soc. Lond., xvi: 271–273. *Figs.* 4–9.
1863.	“	Can. nat. and geol., viii: 280. *Pl.* 6, *figs.* 57–61.
1865.	Lyell.	Elem. geol., 6th ed., 509. *Fig.* 562 *a–c*.
1867.	Woodward.	Trans. geol. soc. Glasg., ii: 234–237. *Pl.* 3, *figs.* 11–13, 11*a*=13*a*.
1867.	Binney.	Proc. lit. phil. soc. Manch., vi: 59.
1867.	“	Geol. mag., iv: 132.
1868.	Scudder.	Geol. mag., v: 216.
1868.	“	Amer. nat., i: 630. *Pl.* 16, *fig.* 4.
1868.	“	Dawson, Acad. geol., 2d ed., 495–496.
1869.	“	Quart. journ. geol. soc. Lond., xxv: 441.
1872.	Packard.	Guide ins., 3d ed., 78. *Pl.* 1, *fig.* 4.
1873.	Scudder.	Mem. Bost. soc. nat. hist., ii: 232–233.
1877.	Goldenberg.	Fauna saræp. foss., ii: 34.
1877.	Nicholson.	Life-hist. earth, 182. *Fig.* 124 *a–c*.
1878.	Scudder.	Mem. Bost. soc. nat. hist., ii: 561. *Fig.* 1.
1878.	“	Suppl. note foss. Myr., 1. *Fig.* 1.
1878.	Dawson.	Acad. geol., suppl. 2d ed., 56. *Fig.* 11*a*.
1879.	Nicholson.	Man. palæont., 2d ed., i: 403. *Fig.* 254.
1880.	Dawson.	Chain of life, 145. *Fig.* 126*a*.
1882.	Scudder.	Mem. Bost. soc. nat. hist., iii: 148.
1883.	Lacoe.	List pal. foss. ins., 19–20.
1885.	Scudder.	Zittel, Handb. palaeont., i, th. ii: 730. *Fig.* 902*a*.
1886.	“	Zittel-Barrois, Traité de paléont., ii: 729. *Fig.* 918*a*.
1889.	Miller.	N. A. geol. and pal., 574. *Figs.* 1073, 1073*a*.
1889.	Nicholson.	Man. palæont., 3d ed., i: 585. *Fig.* 440.
1890.	Scudder.	Foss. ins. N. A., i: 22–23, 31, 200. *Fig.* 1 on *p.* 31.

See also **X. woodwardii.**

52. **Xylobius similis.** (Archiulidæ.)

Locality: Joggins, N. S. Horizon: Carboniferous.

1868.	Scudder.	Dawson, Acad. geol., 2d ed., 496.
1869.	“	Quart. journ. geol. soc. Lond., xxv: 441 (undescr.).
1873.	“	Mem. Bost. soc. nat. hist., ii: 233–234.
1878.	“	Mem. Bost. soc. nat. hist., ii: 561. *Fig.* 2.
1878.	“	Suppl. note foss. Myr., 1. *Fig.* 2.

1878. **Dawson.** Acad. geol., suppl. 2d ed., 56. *Fig.* 11*b*.
1883. **Lacoe.** List pal. foss. ins., 20.
1889. **Miller.** N. A. geol. and pal., 574.
1890. **Scudder.** Foss. ins. N. A., i: 23–24, 31. *Fig.* 2.

53. Xylobius woodwardii. (Archiulidæ.)

Locality: Kilmaurs, Huddersfield, England. **Horizon:** Carboniferous.

1869. **Scudder.** Quart. journ. geol. soc. Lond., xxv: 441 (undescr.).
1873. " Mem. Bost. soc. nat. hist., ii: 238–239.
1882. " Mem. Bost. soc. nat. hist., iii: 148.
1890. " Foss. ins. N. A., i: 28–29, 200.

See also X. sigillariæ.

ARACHNIDA.

54. ——— ———.

Locality: Wettin, Germany. **Horizon:** Carboniferous.

1886. **Kliver.** Palaeontogr., xxxii: 112–113. *Pl.* 14, *figs.* 14, 14 *a-b*.

55. ——— ———.

Locality: Bohemia. **Horizon:** Carboniferous.

1852. **Reuss.** Geogn. verhältn. Böhmens, 59.

56. ——— ———. (Anthracomarti.)

Locality: Steinbachthal, Saarbrück, Germany. **Horizon:** Carboniferous.

1886. **Kliver.** Palaeontogr. xxxii: 110–112. *Pl.* 14, *fig.* 11.
1886. **Karsch.** Palaeontogr. xxxii: 111–112.

57. ——— ———. (Eoscorpioidæ.)

Locality? **Horizon:** Carboniferous.

1889. **Nicholson.** Man. palæont., 3d ed., i: 573. *Fig.* 430 *c-d*.

58. ——— ———. (Palæophonoidæ.)

Locality: Lesmahagow, Scotland. **Horizon:** Upper Silurian.

1885. **Peach.** Nature, xxxi: 297 (scorpion). *Fig.* 2.

See also Palæophonus ———, Palæophonus caledonicus.

59. ——— ———. (Scorpiones.)

Locality: Chomle, Bohemia. **Horizon:** Carboniferous.

1837. **Buckland.** Geol. and mineral., ii: 79. *Pl.* 46″, *fig.* 13.
1838. " Géologie, éd. Agassiz, ii: expl. pl. 46″, p. 6. *Pl.* 46″, *fig.* 13.

60. ——— ———. (Scorpiones.)

Locality: Scotland. **Horizon:** Carboniferous.

1882. **Peach.** Trans. roy. soc. Edinb., xxx: 406–407. *Pl.* 22, *figs.* 4–6; *Pl.* 23, *figs.* 13–15, 17–21.

61. ——— ———. (Scorpiones.)

Locality: Joggins, N. S. **Horizon:** Carboniferous.

1883. **Scudder.** Phil. trans., 1882: 650.

62. **Anthracomartus** ———. (Architarboidæ.)

Locality: Petrovic near Rakonitz, Bohemia. Horizon: Carboniferous.

1888.	**Kušta.**	Věstn. král. česko společn. nauk, 1888: 199.

63. **Anthracomartus affinis.** (Architarboidæ.)

Locality: Rakonitz, Bohemia. Horizon: Carboniferous.

1885.	**Kušta.**	Sitzungsb. böhm. gesellsch. wiss., 1884: 399–400. *Pl., fig.* 2.
1885.	"	Neue arachniden, 4–5. *Pl., fig.* 2.

64. **Anthracomartus carbonis.** (Architarboidæ.)

Locality: Mons, Belgium. Horizon: Carboniferous.

1885.	**Scudder.**	Comptes rend. soc. ent. Belg., (3), lxii: 84–85.
1885.	"	Anthr. carb., 1–2.

See also Brachypyge carbonis.

Anthracomartus hageni. See Termes hageni, etc.

65. **Anthracomartus krejčii.** (Architarboidæ.)

Locality: Rakonitz, Bohemia. Horizon: Carboniferous.

1883.	**Kušta.**	Sitzungsb. böhm. gesellsch. wiss., 1883: 340–345. *Pl., figs.* 1–3.
1883.	"	Anthracomartus krejčii, 3–7. *Pl., figs.* 1–3.
1884.	**Scudder.**	Proc. Amer. acad. arts sc., xx: 17.

See also A. minor.

66. **Anthracomartus minor.** (Architarboidæ.)

Locality: Rakonitz, Bohemia. Horizon: Carboniferous.

1884.	**Kušta.**	Sitzungsb. böhm. gesellsch. wiss., 1884: 191.
1884.	"	Thelyphonus bohemicus, 7 (name only).
1884.	"	Sitzungsb. böhm. gesellsch. wiss., 1884: 398–399. *Pl., fig.* 1.
1885.	"	Neue arachniden, 3–4. *Pl., fig.* 1.
1885.	"	Neue foss. arthrop. Rak., 6 (printed krejčii but corrected in MSS. to minor).

See also A. krejčii.

67. **Anthracomartus pustulatus.** (Architarboidæ.)

Locality: Mazon Creek, Ill. Horizon: Carboniferous.

1884.	**Scudder.**	Proc. Amer. acad. arts sc., xx: 18.
1889.	**Lesley.**	Dict. foss. Penn., i, p. v.
1889.	**Miller.**	N. A. geol. and pal., 570.
1890.	**Scudder.**	Mem. Bost. soc. nat. hist., iv: 452–453. *Pl.* 40, *figs.* 5, 8.
1890.	"	Foss. ins. N. A., i: 428–429. *Pl.* 32, *figs.* 5, 8.

68. **Anthracomartus socius.** (Architarboidæ.)

Locality: Rakonitz, Bohemia. Horizon: Carboniferous.

1888.	**Kušta.**	Věstn. král. česko společn. nauk, 1888: 198–199, 204–205. *Pl. fig.* 4.

69. **Anthracomartus trilobitus.** (Architarboidæ.)

Locality: Fayetteville, Ark. Horizon: Carboniferous.

1884.	**Scudder.**	Proc. Amer. acad. arts sc., xx: 17–18.
1885.	"	Comptes rend. soc. ent. Belg., (3), lxii: 85. *Fig.* on p. 84.
1885.	"	Anthr. carbonis, 2. *Fig.* on *p.* 1.

1886.	Harvey.	Proc. acad. nat. sc. Philad., 1886: 231–232.
1889.	Lesley.	Dict. foss. Penns., i, p. v.
1889.	Miller.	N. A. geol. and pal., 570.
1890.	Scudder.	Mem. Bost. soc. nat. hist., iv: 451–452. *Pl.* 39, *figs.* 7–10.
1890.	"	Foss. ins. N. A., i: 427–428. *Pl.* 31, *figs.* 7–10.

70. **Anthracomartus völkelianus.** (Architarboidæ.)

Locality: Neurode, Schlesien. Horizon: Carboniferous.

1882.	Karsch.	Zeitschr. deutsch. geol. gesellsch., 1882: 556–558, 560, 561. *Pl.* 21, *figs.* 1, 2.
1884.	Scudder.	Proc. Amer. acad. arts sc., xx: 17.
1885.	"	Zittel, Handb. palaeont., i, th. ii: 736. *Fig.* 911.
1886.	"	Zittel-Barrois, Traité de paléont., ii: 735. *Fig.* 927.

71. **Anthracoscorpio juvenis.** (Eoscorpioidæ.)

Locality: Rakonitz, Bohemia. Horizon: Carboniferous.

1888.	Kušta.	Věstn. král. česke společn. nauk, 1888: 202–203, 206.

See also Cyclophthalmus senior, etc.

72. **Aranea ———.**

Locality: Coalbrookdale, England. Horizon: Carboniferous.

1834.	Prestwich.	Lond. Edinb. phil. mag., iv: 376.

73. **Architarbus elongatum.** (Architarboidæ.)

Locality: Mazon Creek, Ill. Horizon: Carboniferous.

1890.	Scudder.	Mem. Bost. soc. nat. hist., iv: 449–450. *Pl.* 40, *fig.* 4.
1890.	"	Foss. ins. N. A., i: 425–426. *Pl.* 32, *fig.* 4.

74. **Architarbus rotundatum.** (Architarboidæ.)

Locality: Mazon Creek, Ill. Horizon: Carboniferous.

1868.	Scudder.	Worth., Geol. surv. Ill., iii: 568 (rotundatus). *Fig.* 4.
1872.	Woodward.	Geol. mag., ix: 386. *Pl.* 9, *fig.* 2.
1872.	"	Arachn. coal meas., 2. *Pl.* 9, *fig.* 2.
1882.	Karsch.	Zeitschr. deutsch. geol. gesellsch., 1882: 560.
1883.	Lacoe.	List pal. foss. ins., 20.
1884.	Scudder.	Proc. Amer. acad. arts sc., xx: 17.
1885.	"	Zittel, Handb. palaeont., i, th. ii: 736. *Fig.* 910.
1886.	"	Zittel-Barrois, Traité de paléont., ii: 735. *Fig.* 926.
1886.	"	Bull. U. S. geol. surv., No. 31: 24.
1889.	Lesley.	Dict. foss. Penns., i, p. vii.
1889.	Miller.	N. A. geol. and pal., 570. *Fig.* 1064.
1890.	Scudder.	Mem. Bost. soc. nat. hist., iv: 449.
1890.	"	Foss. ins. N. A., i: 425.

75. **Architarbus silesiacum.** (Architarboidæ.)

Locality: Glatz, Silesia. Horizon: Carboniferous.

1879.	Roemer.	Jahresb. schles. gesellsch. vaterl. cult., lvi: 54–55 (**silesiacus**).
1884.	Scudder.	Proc. Amer. acad. arts sc., xx: 17.
1885.	"	Zittel, Handb. palaeont., i, th. ii: 736.
1886.	"	Zittel-Barrois, Traité de paléont., ii: 735.
1886.	"	Bull. U. S. geol. surv., No. 31: 24.

76. Architarbus subovale. (Architarboidæ.)

Localities: Burnley and Padiham, Lancashire, England. **Horizon:** Middle carboniferous.

1872.	Woodward.	Geol. mag., ix: 385–387 (subovalis). *Pl.* 9, *fig.* 1*ab*.
1872.	"	Arachn. coal meas., 1–3. *Pl.* 9, *fig.* 1*ab*.
1876.	Roemer.	Lethæa geogn. *Pl.* 47, *fig.* 2.
1877.	Haughton.	Journ. geol. soc. Ireland, n. s., iv: 222–223. 2 *figs.*
1879.	Nicholson.	Manual palæont., 2d ed., i: 401. *Fig.* 252*B*.
1882.	Karsch.	Zeitschr. deutsch. geol. gesellsch., 1882: 560.
1884.	Scudder.	Proc. Amer. acad. arts sc., xx: 17.
1885.	"	Zittel, Handb. palaeont., i, th. ii: 736.
1886.	"	Zittel-Barrois, Traité de paléont., ii: 735.
1886.	"	Bull. U. S. geol. surv., No. 31: 24.
1889.	Nicholson.	Man. palæont., 3d ed., i: 576. *Fig.* 432*b*.

See also Curculioides ansticii, Hevila ansticii.

77. Arthrolycosa antiqua.

Locality: Mazon Creek, Ill. **Horizon:** Carboniferous.

1874.	Harger.	Am. journ. sc., (3), vii: 219–223. *Fig.*
1883.	Lacoe.	List pal. foss. ins., 20.
1884.	Scudder.	Proc. Amer. acad. arts sc., xx: 15.
1885.	"	Zittel, Handb. palaeont., i, th. ii: 735. *Fig.* 909.
1886.	"	Zittel-Barrois, Traité de paléont., ii: 734. *Fig.* 925.
1886.	"	Bull. U. S. geol. surv., No. 31: 24.
1889.	Beecher.	Am. journ. sc., (3), xxxviii: 219–223. 3 *figs.*
1889.	Lesley.	Dict. foss. Penn., i: 37, vii. *Fig.*
1889.	Miller.	N. A. geol. and pal. *Fig.* 1065.
1890.	McCook.	Amer. spiders, ii: 455–456. *Figs.* 381–382.

78. Brachypyge carbonis. (Architarboidæ.)

Locality: Mons, Belgium. **Horizon:** Carboniferous.

1878.	Woodward.	Geol. mag., (2), v: 433–436. *Pl.* 11.
1878.	"	Fossil crab coal-meas. Belg., 1–4. *Pl.* 11.
1878.	"	Bull. acad. roy. Belg., (2), xlv: 410–415. *Pl.*

See also Anthracomartus carbonis.

79. Buthus carbonarius. (Eoscorpioidæ.)

Locality: Mazon Creek, Ill. **Horizon:** Carboniferous.

1868.	Meek-Worth.	Am. journ. sc. arts, (2), xlvi: 22–24.

See also Eoscorpius carbonarius.

Calotermes hageni. See Termes (Calotermes) hageni.

80. Centromachus anglicus. (Eoscorpioidæ.)

Locality: England. **Horizon:** Carboniferous.

1885.	Thorell.	K. svensk. vetensk. akad. handl., xxi, No. 9: 25.

See also Eoscorpius anglicus.

81. Centromachus euglyptus. (Eoscorpioidæ.)

Locality: Scotland. **Horizon:** Carboniferous.

1885.	Thorell.	K. svensk. vetensk. akad. handl., xxi, No. 9: 21.

See also Eoscorpius euglyptus.

82. Centromachus glaber. (Eoscorpioidæ.)

Locality: Scotland. Horizon: Lower Carboniferous.

1885. Thorell. K. svensk. vetensk. akad. handl., xxi, No. 9: 25.
See also Eoscorpius glaber.

83. Centromachus inflatus. (Eoscorpioidæ.)

Locality: Scotland. Horizon: Lower Carboniferous.

1885. Thorell. K. svensk. vetensk. akad. handl., xxi, No. 9: 25.
See also Eoscorpius inflatus.

84. Centromachus tuberculatus. (Eoscorpioidæ.)

Locality: Scotland. Horizon: Carboniferous.

1885. Thorell. K. svensk. vetensk. akad. handl., xxi, No. 9: 25.
See also Eoscorpius tuberculatus.

85. Curculioides ansticii. (Architarboidæ.)

Locality: Coalbrookdale, England. Horizon: Carboniferous.

1837. Buckland. Geol. and mineral., ii: 76. *Pl.* 46″, *fig.* 1.
1838. “ Géologie, éd. Agassiz, expl. pl. 46″, pp. 1-2. *Pl.* 46″, *fig.* 1.
1838. Agassiz. Buckl., Géologie, éd. Agassiz, expl. pl. 46″, p. 2 note.
1854. Mantell. Medals of creation, 2d ed., ii: 555.
1881. Scudder. Geol. mag., (2), viii: 300.
1883. “ Mem. Bost. soc. nat. hist., iii: 223.
1886. “ Bull. U. S. geol. surv., No. 31: 24 (= ? Architarbus subovale).
1890. “ Foss. ins. N. A., i: 245.
See also Hevila ansticii, Architarbus subovale.

86. Curculioides prestvicii. (Eophrynoidæ.)

Locality: Coalbrookdale, England. Horizon: Carboniferous.

1837. Buckland. Geol. and mineral., ii: 76-77. *Pl.* 46″, *fig.* 2.
1838. “ Géologie, éd Agassiz, ii, expl. pl. 46″: pp. 3-4. *Pl.* 46″, *fig.* 2.
1854. Mantell. Medals of creation, 2d ed., 555.
1882. Karsch. Zeitschr. deutsch. geol. gesellsch., 1882: 560.
See also Duma prestvicii, Eophrynus prestvicii, Euphrynus prestvicii.

87. Cyclophthalmus ———. (Eoscorpioidæ.)

Locality: Bohemia. Horizon: Carboniferous.

1882. Peach. Trans. roy. soc. Edinb., xxx: (copy of fig. of C. senior). *Pl.* 23, *fig.* 25.
See also C. senior, etc.

88. Cyclophthalmus kralupensis. (Eoscorpioidæ.)

Locality: Kralup, Bohemia. Horizon: Carboniferous.

1885. Thorell. K. svensk. vetensk. akad. handl., xxi, No. 9: 17 note, 20.
See also C. senior, etc.

89. Cyclophthalmus senior. (Eoscorpioidæ.)

Localities: Stein-Aujezd Kralup, Chomle, Rakonitz, Bohemia. Horizon: Carboniferous.

1835. Corda. Verhandl. gesellsch. vaterl. mus. Böhm., 1835: 38-43. *Pl., figs.* 1-14.
1837. Buckland. Geol. and mineral., ii: 74-75 (no spec. name). *Pl.* 46′, *figs.* 1-7.

1838. Buckland. Géologie, éd. Agassiz, ii: expl. pl. 46′ (no spec. name). *Pl.* 46′, *figs.* 1–7.

1844. Walck.-Gerv. Hist. nat. ins., Apt., iii: 70–72 (no specific name).

1852. Giebel. Deutschl. petref., 635.

1856. " Insect. d. vorwelt, 470–471.

1853–'56. Bronn. Lethæa geogn., 3e aufl., i, th. ii: 681. *Pl.* 9³, *fig.* 16.

1874. Fritsch. Arch. naturw. landesdurchf. Böhm., ii, th. ii, No. 1: 9–14. *Pl.* 1, *figs.* 1–8; *Pl.* 2, *figs.* 1–6, 2*a*; *Pl.* 3, *fig.* 4.

1876. Roemer. Lethæa geogn. *Pl.* 47, *fig.* 1.

1877. Nicholson. Life-hist. earth, 181. *Fig.* 123.

1879. " Manual palæont., 2d ed., i: 400. *Fig.* 251.

1882. Karsch. Zeitschr. deutsch. geol. gesellsch., 1882: 560.

1884. Scudder Proc. Amer. acad. arts sc., xx: 22.

1884. Kušta. Vesmír, xiii: 97–98.

1884. " Sitzungsb. böhm. gesellsch. wiss., 1884: 48–50.

1884. " Neuer fundort Cyclophth., 1–3.

1885. " Sitzungsb. böhm gesellsch. wiss., 1884: 401. *Pl.*, *fig.* 4.

1885. " Neue arachniden, 6. *Pl.*, *fig.* 4.

1885. Thorell. K. svensk. vetensk. akad. handl., xxi, No. 9: 17 note, 24.

1885. Scudder. Zittel, Handb. palaeont., i, th. ii: 740.

1886. " Zittel-Barrois, Traité de paléont., ii: 739.

1889. Nicholson. Man. palæont., 3d ed., i: 579. *Fig.* 435.

See also Cyclophthalmus ——, C. kralupensis, C. sternbergi, Microlabis sternbergi, Anthracoscorpio juvenis.

90. Cyclophthalmus sternbergi. (Eoscorpioidæ.)

Locality: Bohemia. Horizon: Carboniferous.

1854. Pictet. Traité paléont., 2e éd., ii: 407. *Pl.* 41, *fig.* 1.

1885. Thorell. K. svensk. vetensk. akad. handl., xxi, No. 9: 17 note, 24. [The same as C. senior?]

See also Microlabis sternbergi, Cyclophthalmus senior, etc.

91. Duma prestvicii. (Eophrynoidæ.)

Locality: England. Horizon: Carboniferous.

1856. Giebel. Insect. d. vorwelt, 137.

See also Curculioides prestvicii, Eophrynus prestvicii, Euphrynus prestvicii.

92. Eolycosa lorenzi.

Locality: Rakonitz, Bohemia. Horizon: Carboniferous.

1885. Kušta. Sitzungsb. k. böhm. gesellsch. wiss., 1885: 592–593. *Fig.*

1885. " Neue foss. arthr., 3–4. *Fig.*

1888. " Věstn. král. česke společn. nauk, 1888: 197.

93. Eophrynus prestvicii. (Eophrynoidæ.)

Locality: Dudley, England. Horizon: Carboniferous.

1871. Woodward. Geol. mag., viii: 385–387. *Pl.* 11, *figs.* 1, 2.

1872. " Rep. Brit. assoc. adv. sc., xli: notic. 113.

1879. Nicholson. Manual palaeont., 2d ed., i: 401. *Fig.* 252*a*.

1884. Scudder. Proc. Amer. acad. arts sc., xx: 19.

1885. " Zittel, Handb. palaeont., i, th. ii: 737. *Fig.* 913.

1886. " Zittel-Barrois, Traité de paléont., ii: 736. *Fig.* 929.

1886. " Bull. U. S. geol. surv., No. 31: 25.

1889. Lesley. Dict. foss. Penns., i: 37 (unnamed). *Fig.*

1889. Nicholson. Man. palæont., 3d ed., i: 576. *Fig.* 432*a*.

See also Curculioides prestvicii, Duma prestvicii, Euphrynus prestvicii.

94. **Eophrynus salmi.** (Eophrynoidæ.)

Locality: Ostrau, Moravia. Horizon: Carboniferous.

1877.	Stur.	Abhandl. geol. reichsanst., viii: no. 2; p. v. note (Euphrynus). *Fig.*
1884.	Scudder.	Proc. Amer. acad. arts sc., xx: 19.
1885.	"	Zittel, Handb. palaeont., i, th. ii: 737.
1886.	"	Zittel-Barrois, Traité de paléont., ii: 736.
1886.	"	Bull. U. S. geol. surv., No. 31: 25.

95. **Eoscorpius ———.** (Eoscorpioidæ.)

Locality: River Esk, Scotland. Horizon: Lower Carboniferous.

1882.	Peach.	Trans. roy. soc. Edinb., xxx: 404–405. *Pl.* 23, *figs.* 11, 11*a*.

96. **Eoscorpius anglicus.** (Eoscorpioidæ.)

Locality: Mansfield, England. Horizon: Carboniferous.

1876.	Woodward.	Quart. journ. geol. soc. Lond., 1876: 58. *Pl.* 8, *figs.* 2, 3, 3*a*, 5.
1882.	Karsch.	Zeitschr. deutsch. geol. gesellsch., 1882: 560.
1884.	Scudder.	Proc. Amer. acad. arts sc., xx: 22.

See also Centromachus anglicus.

97. **Eoscorpius carbonarius.** (Eoscorpioidæ.)

Localities: Mazon Creek, Ill.; Sandwell Park Colliery, near Birmingham, England.
Horizon: Carboniferous.

1868.	Meek-Worth.	Am. journ. sc., (2), xlvi: 22–25.
1868.	"	Worth., Geol. surv. Ill., iii: 560–562. *Figs.*
1876.	Woodward.	Quart. journ. geol. soc. Lond., 1876: 57–59. *Pl.* 8, *fig.* 1.
1880.	Dawson.	Dawn of life, 150. *Fig.* 132 on p. 151.
1882.	Peach.	Trans. roy. soc. Edinb., xxx: 412. *Pl.* 23, *figs.* 23–23*b*.
1882.	Karsch.	Zeitschr. deutsch. geol. gesellsch., 1882: 560.
1883.	Lacoe.	List pal. foss. ins., 21.
1884.	Scudder.	Proc. Amer. acad. arts sc., xx: 21.
1885.	Thorell.	K. svensk. vetensk. akad. handl., xxi, No. 9: 25.
1885.	Scudder.	Zittel, Handb. palaeont., i, th. ii: 739. *Fig.* 916.
1886.	"	Zittel-Barrois, Traité de paléont., ii: 739. *Fig.* 933.
1889.	Lesley.	Dict. foss. Penns., i: 220. *Fig.*
1889.	Miller.	N. A. geol. and pal., 571. *Fig.* 1066.
1889.	Nicholson.	Man. palaeont., 3d ed., i: 578. *Fig.* 434.

See also Buthus carbonarius.

98. **Eoscorpius euglyptus.** (Eoscorpioidæ.)

Locality: River Esk, Scotland. Horizon: Lower Carboniferous.

1882.	Peach.	Trans. roy. soc. Edinb., xxx: 402–404. *Pl.* 22, *figs.* 3–3*d*.
1884.	Scudder.	Proc. Amer. acad. arts sc., xx: 22.

See also Centromachus euglyptus.

99. **Eoscorpius glaber.** (Eoscorpioidæ.)

Locality: Redhall, River Esk, Dumfriesshire. Horizon: Lower Carboniferous.

1882.	Peach.	Trans. roy. soc. Edinb., xxx: 400–402. *Pl.* 22, *figs.* 2–2*l*.
1884.	Scudder.	Proc. Amer. acad. arts sc., xx: 22.

See also Centromachus glaber.

100. **Eoscorpius inflatus.** (Eoscorpioidæ.)

Locality: River Esk, Scotland. Horizon: Lower Carboniferous.

1882. Peach. Trans. roy. soc. Edinb., xxx: 405–406. *Pl.* 23, *figs.* 12–12*d*.
1884. Scudder. Proc. Amer. acad. arts sc., xx: 22.
See also Centromachus inflatus.

101. **Eoscorpius tuberculatus.** (Eoscorpioidæ.)

Localities: Blair Point, Redhall, Cramond, Scotland. Horizon: Carboniferous.

1882. Peach. Trans. roy. soc. Edinb., xxx: 398–400. *Pl.* 23, *figs.* 8–8*h*.
1884. Scudder. Proc. Amer. acad. arts sc., xx: 22.
See also Centromachus tuberculatus.

102. **Eoscorpius woodianus.** (Eoscorpioidæ.)

Locality: Illinois. Horizon: Carboniferous.

1882. Peach. Trans. roy. soc. Edinb., xxx: 408–409. *Pl.* 23, *figs.* 24, 24*a*.
1885. Thorell. K. svensk. vetensk. akad. handl., xxi, No. 9: 25.
See also Mazonia woodiana.

103. **Eotarbus litorale.** (Architarboidæ.)

Locality: Rakonitz, Bohemia. Horizon: Carboniferous.

1888. Kušta. Věstn. král. česke společn. nauk, 1888: 198, 204 (litoralis). *Pl.*, *fig.* 3.

104. **Euphrynus prestvicii.** (Eophrynoidæ.)

Locality: England. Horizon: Carboniferous.

1876. Roemer. Lethaea geogn. *Pl.* 47, *fig.* 12.
See also Eophrynus prestvicii, Duma prestvicii, Curculioides prestvicii.

Euphrynus salmi. See Eophrynus salmi.

105. **Geralinura bohemica.** (Geralinuridæ.)

Locality: Bohemia. Horizon: Carboniferous.

1885. Scudder. Zittel, Handb. palaeont., i, th. ii: 737. *Fig.* 914.
1886. " Zittel-Barrois, Traité de paléont., ii: 736. *Fig.* 930.
1886. " Bull. U. S. geol. surv., No. 31: 26.
1890. " Mem. Bost. soc. nat. hist., iv: 455–456.
1890. " Foss. ins. N. A., i: 431–432.
See also Thelyphonus bohemicus, G. (Thelyphonus) bohemica.

106. **Geralinura (Thelyphonus) bohemica.** (Geralinuridæ.)

Locality: Bohemia. Horizon: Carboniferous.

1885. Scudder. Zittel, Handb. palaeont., i, th. ii: 737. *Fig.* 914.
1886. " Zittel-Barrois, Traité de paléont., ii: 736. *Fig.* 930.
See also Geralinura bohemica, etc.

107. **Geralinura carbonaria.** (Geralinuridæ.)

Locality: Mazon Creek, Ill. Horizon: Carboniferous.

1884. Scudder. Proc. Amer. acad. arts sc., xx: 19–20.
1885. " Zittel, Handb. palaeont., i, th. ii: 737.
1886. " Zittel-Barrois, Traité de paléont., ii: 737.
1886. " Bull. U. S. geol. surv., No. 31: 26.
1889. Miller. N. A. geol. and pal., 571.
1890. Scudder. Mem. Bost. soc. nat. hist., iv: 455. *Pl.* 39, *figs.* 1, 3, 4.
1890. " Foss. ins. N. A., i: 431. *Pl.* 31, *figs.* 1, 3, 4.

108. **Geralinura crassa.** (Geralinuridæ.)

Locality: Rakonitz, Bohemia. Horizon: Carboniferous.

1888.	Kušta.	Věstn. král. česke společn. nauk, 1888: 202, 206.

109. **Geralinura noctua.** (Geralinuridæ.)

Locality: Rakonitz, Bohemia. Horizon: Carboniferous.

1888.	Kušta.	Věstn. král. česke společn. nauk, 1888: 200–201, 206. *Pl., fig.* 6.

110. **Geralinura scudderi.** (Geralinuridæ.)

Locality: Rakonitz, Bohemia. Horizon: Carboniferous.

1888.	Kušta.	Věstn. král. česke společn. nauk, 1888: 201–202, 205. *Pl., fig.* 5.

111. **Geralycosa fričii.**

Locality: Rakonitz, Bohemia. Horizon: Carboniferous.

1888.	Kušta	Věstn. král. česke společn. nauk, 1888: 196, 203–204. *Pl., fig.* 1.

112. **Geraphrynus carbonarius.** (Architarboidæ.)

Locality: Mazon Creek, Ill. Horizon: Carboniferous.

1884.	Scudder.	Proc. Amer. acad. arts sc., xx: 16–17.
1885.	"	Zittel, Handb. palaeont., i, th. ii: 735.
1886.	"	Zittel-Barrois, Traité de paléont., ii: 735.
1886.	"	Bull. U. S. geol. surv., No. 31: 24.
1889.	Miller.	N. A. geol. and pal., 571.
1890.	Scudder.	Mem. Bost. soc. nat. hist., iv: 446–447. *Pl.* 40, *figs.* 1, 9, 10, 12.
1890.	"	Foss. ins. N. A., i: 422–423. *Pl.* 32, *figs.* 1, 9, 10, 12.

113. **Geratarbus lacoei.** (Architarboidæ.)

Locality: Mazon Creek, Ill. Horizon: Carboniferous.

1890.	Scudder.	Mem. Bost. soc. nat. hist., iv: 448. *Pl.* 40, *fig.* 11.
1890	"	Foss. ins. N. A., i: 424. *Pl.* 32, *fig.* 11.

114. **Geratarbus scabrum.** (Architarboidæ.)

Locality: Mazon Creek, Ill. Horizon: Carboniferous.

1890.	Scudder.	Mem. Bost. soc. nat. hist., iv: 448–449. *Pl.* 39, *fig.* 5.
1890.	"	Foss. ins. N. A., i: 424–425. *Pl.* 31, *fig.* 5.

115. **Graeophonus carbonarius.** (Geralinuridæ.)

Locality: Mazon Creek, Ill. Horizon: Carboniferous.

1890.	Scudder.	Mem. Bost. soc. nat. hist., iv: 454. *Pl.* 40, *figs.* 2, 3, 6.
1890.	"	Foss. ins. N. A., i: 430. *Pl.* 32. *figs.* 2, 3, 6.

See also Libellula carbonaria.

116. **Hevila ansticii.** (Architarboidæ.)

Locality: England. Horizon: Carboniferous.

1856.	Giebel.	Insect. d. vorwelt, 143.

See also Architarbus subovale. Curculioides ansticii.

117. **Kreischeria wiedei.** (Eophrynoidæ.)

Locality: Zwickau, Germany. Horizon: Carboniferous.

1882.	Geinitz.	Zeitschr. deutsch. geol. gesellsch., 1882: 238–242. *Pl.* 14, *figs.* 1, 2.
1882.	Karsch.	Zeitschr. deutsch. geol. gesellsch., 1882: 560.

1884.	Scudder.	Proc. Amer. acad. arts sc., xx: 18–19.
1885.	"	Zittel, Handb. palaeont., i, th. ii: 736. *Fig.* 912.
1886.	"	Zittel-Barrois, Traité de paléont., ii: 735. *Fig.* 928.
1886.	"	Bull. U. S. geol. surv., No. 31: 25.

118. Kustarachne tenuipes. (Architarboidæ.)

Locality: Mazon Creek, Ill. Horizon: Carboniferous.

1890.	Scudder.	Mem. Bost. soc. nat. hist., iv: 450–451. *Pl.* 40, *fig.* 7.
1890.	"	Foss. ins. N. A., i: 426–427. *Pl.* 32, *fig.* 7.

119. Libellula carbonaria. (Geralinuridæ.)

Locality: Cape Breton, Nova Scotia. Horizon: Carboniferous.

1875.	Scudder.	Proc. Bost. soc. nat. hist., xviii: 113–114 (unnamed).
1876.	"	Ent. notes, v: 2–3 (unnamed).
1876.	"	Proc. Amer. assoc. adv. sc., xxiv: *B* 110–111. *Fig.* 1.
1876.	"	Can. nat., (2), viii: 88–89. *Fig.* 1 [2].
1876.	"	Ins. carb. Cape Breton, [1–2]. *Fig.* 1 [2].
1878.	Dawson.	Acad. geol., suppl. 2d ed., 55. *Fig.* 8.
1880.	"	Chain of life, 148. *Fig.* 129.
1883.	Lacoe.	List pal. foss. ins., 9–10.
1885.	Scudder.	Mem. Bost. soc. nat. hist., iii: 350.
1885.	"	Zittel, Handb. palaeont., i, th. ii: 736.
1886.	"	Zittel-Barrois, Traité de paléont., ii: 735.
1886.	"	Bull. U. S. geol. surv., No. 31: 25.
1889.	Lesley.	Dict. foss. Penns., i: 336.
1889.	Miller.	N. A. geol. and pal., 578. *Fig.* 1074.
1890.	Scudder.	Foss. ins. N. A., i: 314.

See also Græophonus carbonarius.

120. Mazonia ———. (Eoscorpioidæ.)

Locality: Joggins, N. S. Horizon: Carboniferous.

1883.	Scudder.	Phil. trans., 1882: 650.

Mazonia woodana. See Mazonia woodiana.

121. Mazonia woodiana. (Eoscorpioidæ.)

Locality: Mazon Creek, Ill. Horizon: Carboniferous.

1868.	Meek-Worth.	Worth., Geol. surv. Ill., iii: 563–565. *Figs. A–D.*
1882.	Peach.	Trans. roy. soc. Edinb., xxx: 408–409.
1882.	Karsch.	Zeitschr. deutsch. geol. gesellsch., 1882: 560.
1883.	Lacoe.	List pal. foss. ins., 21.
1884.	Scudder.	Proc. Amer. acad. arts sc., xx: 22.
1889.	Lesley.	Dict. foss. Penns., i: 382.
1889.	Miller.	N. A. geol. and pal., 571 (woodana).

See also Eoscorpius woodianus.

122. Microlabis sternbergi. (Eoscorpioidæ.)

Compared with Obisium carcinoides, Europe.

Locality: Malikowetz bei Chomle, Bohemia. Horizon: Carboniferous.

1839.	Corda.	Verhandl. gesellsch. vaterl. mus. Böhm., 1839: 15–18. *Pl.* 1, *figs.* 1–5.
1852.	Giebel.	Deutschl. petref., 635.
1853–'56.	Bronn.	Lethæa geogn., 3^e aufl. i, th. ii: 681.
1856.	Giebel.	Insect. d. vorwelt, 474.

1870. Hagen. Proc. Bost. soc. nat. hist., xiii: 269.

1874. Frič. Arch. naturw. landesdurchf. Böhm., ii, pt. 2, No. 1: 13–14 (= young Cyclophthalmus senior).

1876. Gerstaecker. Klass. ordn. arthr., Crust., i: 292.

1882. Karsch. Zeitschr. deutsch. geol. gesellsch., 1882: 560.

See also Cyclophthalmus senior, C. sternbergi, etc.

Palæophoneus nuncius. See Palæophonus nuncius.

123. Palæophonus ——. (Palæophonoidæ.)

Locality: Scotland. Horizon: Upper Silurian.

1889. Nicholson. Man. palæont., 3d ed., i: 578. *Fig.* 433.

See also —— —— (Palæophonoidæ) Peach, Palæophonus caledonicus.

124. Palæophonus caledonicus. (Palæophonoidæ.)

Locality: Logan Water, Scotland. Horizon: Silurian.

1886. Hunter. Trans. geol. soc. Glasg., viii: 169–170 (undescr.).

1887. " Trans. geol. soc. Edinb., v: 187–189. *Pl.* 4 (ined.).

See also —— —— (Palæophonoidæ) Peach, Palæophonus ——.

125. Palæophonus nuncius. (Palæophonoidæ.)

Locality: Gotland, Sweden. Horizon: Upper Ludlow beds.

1884. Lindström. Comptes rendus, xcix: 984–985 (Palæophoneus).

1884. " La nature, xcix: 33–34. *Fig.*

1885. Thor.-Lindstr. K. svensk. vetensk. akad. handl., xxi, No. 9. *Pl.*

1885. Scudder. Zittel, Handb. palaeont., i, th. ii: 738. *Fig.* 915.

1885. Brongniart. Jahrb. geol. reichsanst., xxxv: 652 (Palæophoneus).

1886. Scudder. Zittel-Barrois, Traité de paléont., ii: 738. *Fig.* 931.

1886. " Bull. U. S. geol. surv., No. 31: 27.

1887. Lindström. Trans. Edinb. geol. soc., v: 184–186. *Pl.* 3 (ined.).

1890. Lesley. Dict. foss. Penns., ii: 586. *Fig.*

126. Palæophonus osborni. (Eoscorpioidæ.)

Locality: Waterville, N. Y. Horizon: Lower Helderberg.

1885. Whitfield. Science, vi: 87–88. *Fig.*

See also Proscorpius osborni.

127. Palaranea borassifolia. (Liphistioidæ.)

Localities: Svina, Radnitz, Bohemia. Horizon: Carboniferous.

[1854. Reuss. Geogn. verhältn. Böhmens.]

[1864. " Ziva, 231–233.]

1869. Frič. Feistm., Arch. naturw. landesdurchf. Böhm., i, th. ii, Steink. beck. Radn., 66 (undescr.).

1874. " Arch. naturw. landesdurchf. Böhm., ii, th. ii, i: 8 (borassifoliæ). *Pl.* 2, *fig.* 7.

1884. Scudder. Proc. Amer. acad. arts sc., xx: 22.

1884. Kušta. Vesmír, xiii: 97–98.

1885. Scudder. Zittel, Handb. palaeont., i, th. ii: 742.

1886. " Zittel-Barrois, Traité de paléont., ii: 742.

1886. " Bull. U. S. geol. surv., No. 31: 30.

Palaranea borassifoliæ. See Palaranea borassifolia.

128. **Poliochera punctulata.** (Poliocheridæ.)

Locality: Mazon Creek, Ill. Horizon: Carboniferous.

1884.	Scudder.	Proc. Amer. acad. arts sc., xx: 16.
1885.	“	Zittel, Handb. palaeont., i, th. ii: 735.
1886.	“	Zittel-Barrois, Traité de paléont., ii: 734.
1886.	“	Bull. U. S. geol. surv., No. 31: 24.
1889.	Miller.	N. A. geol. and pal., 571.
1890.	Lesley.	Dict. foss. Penns., ii: 730.
1890.	Scudder.	Mem. Bost. soc. nat. hist., iv: 444–445. *Pl.* 39, *figs.* 2, 6.
1890.	“	Foss. ins. N. A., i: 420–421. *Pl.* 31, *figs.* 2, 6.

Proscorpius osbornei. See Proscorpius osborni.

129. **Proscorpius osborni.** (Eoscorpioidæ.)

Locality: Waterville, N. Y. Horizon: Lower Helderberg.

1885.	Whitfield.	Bull. Amer. mus. nat. hist., i: 181–196. *Pl.* 19, 20.
1885.	Scudder.	Zittel, Handb. palaeont., i, th. ii: 739. *Fig.* 915*a*.
1886.	“	Zittel-Barrois, Traité de paléont., ii: 738. *Fig.* 932 on p. 739.
1886.	“	Bull. U. S. geol. surv., No. 31: 28.
1886.	Thorell.	Amer. nat., xx: 269–274 (osbornei).
1886.	Whitfield.	Science, vii: 216–217.
1889.	Miller.	N. A. geol. and pal., 571.
1890.	Lesley.	Dict. foss. Penn., ii: 773–774. *Figs.*

See also Palæophonus osborni.

130. **Protolycosa anthracophila.** (Liphistioidæ.)

Locality: Kattowitz, Oberschlesien. Horizon: Carboniferous.

1865.	Roemer.	Geol. mag., ii: 468.
1866.	“	Rep. Brit. assoc. adv. sc., 1865: not., 73.
1866.	“	Neues jahrb. min., 1866: 136–141. *Pl.* 3, *figs.* 1–3.
1870.	Thorell.	European spiders, 221–222.
1876.	Roemer,	Lethæa geogn. *Pl.* 47, *fig.* 7.
1877.	Goldenberg.	Faun. saræp. foss., ii: 31–33, 51.
1882.	Karsch.	Zeitschr. deutsch. geol. gesellsch., 1882: 559.
1884.	Scudder.	Proc. Amer. acad. arts sc., xx: 22.
1885.	“	Zittel, Handb. palaeont., i, th. ii: 742. *Fig.* 921.
1886.	“	Zittel-Barrois, Traité de paléont., ii: 741. *Fig.* 938 on *p.* 742.
1886.	“	Bull. U. S. geol. surv., No. 31: 30.
1890.	McCook.	Amer. spiders, ii: 453–455. *Figs.* 378-380.

131. **Rakovnicia antiqua.**

Locality: Rakonitz, Bohemia. Horizon: Carboniferous.

1885.	Kušta.	Sitzungsb. böhm. gesellsch. wiss., 1884: 400–401. *Pl.*, *fig.* 3.
1885.	“	Neue arachn., 5–6. *Pl.*, *fig.* 3.
1885.	Scudder.	Zittel, Handb. palaeont., i, th. ii: 735.
1886.	“	Zittel-Barrois, Traité de paléont., ii: 734.
1886.	“	Bull. U. S. geol. surv., No. 31: 24.

132. **Scorpio ———.** (Scorpiones.)

Locality: Nyřan, Bohemia. Horizon: Permian.

1879.	Fritsch.	Fauna d. gaskohle Böhmens, i: 32.

133. **Scudderia carbonaria.** (Architarboidæ.)

Locality: Rakonitz, Bohemia. Horizon: Carboniferous.

1888. Kušta. Věstn. král. česke společn. nauk, 1888: 196–197, 204. *Pl.*, *fig.* 2.

134. **Termes hageni.** (Architarboidæ.)

Locality: Altenwald, Germany. Horizon: Carboniferous.

1877. Goldenberg. Fauna saræp. foss., ii: 50.
1885. Scudder. Handb. palaeont., i, th. ii: 736.
1886. " Zittel-Barrois, Traité de paléont., ii: 735.
1886. " Bull. U. S. geol. surv., No. 31: 25 (vic. Anthracomartus).
See also T. (Calotermes) hageni.

135. **Termes (Calotermes) hageni.** (Architarboidæ.)

Locality: Altenwald, Germany. Horizon: Carboniferous.

1854. Goldenberg. Palaeontogr., iv: 37 (unnamed). *Pl.* 6. *fig.* 8.
1854. " Foss. ins. Saarbrücken, 21 (unnamed). *Pl.* 4, *fig.* 8.
1867. " Vorweltl. fauna steink. Saarbr., 12. *Pl.* 2, *fig.* 7 (ined.).
1873. " Fauna saræp. foss., i: 12. *Pl.* 2, *fig.* 7.
See also Termes hageni.

136. **Thelyphonus bohemicus.** (Geralinuridæ.)

Locality: Rakonitz, Bohemia. Horizon: Carboniferous.

1884. Kušta. Sitzungsb. böhm. gesellsch. wiss., 1884: 186–191. *Pl.*, *figs.* 1–4.
1884. " Thelyphonus bohemicus, 1–7. *Pl.*, *figs.* 1–4.
1885. " Sitzungsb. böhm. gesellsch. wiss., 1884: 401–402.
1885. " Neue arachn., 6–7.
1885. " Neue foss. arthrop. Rak., 5–6.
1885. " Sitzungsb. böhm. gesellsch. wiss., 1885: 594–595.
See also Geralinura bohemica, etc.

PALÆODICTYOPTERA.

THE ORTHOPTEROID SERIES.

137. —— ——.

Locality: Cusel, Rheinpfalz. Horizon: Carboniferous.

1867. Dohrn. Palaeontogr., xvi: 134. *Pl.* 8, *fig.* 4.
See also Termitidium rugosum.

138. —— ——. (Palæoblattariæ.)

Locality: Löbejün, Saxony. Horizon: Carboniferous.

1886. Kliver. Palaeontgr., xxxii: 114–115. *Pl.* 14, *figs.* 13, 13*a*.

139. —— ——. (Palæoblattariæ.)

Compared with Petrablattina sepulta.

Locality: Sydney, Cape Breton. Horizon: Lower Carboniferous.
1879. Scudder. Mem. Bost. soc. nat. hist., iii: 128. *Pl.* 6, *fig.* 11.
1890. " Foss. ins. N. A., i: 148. *Pl.* 6, *fig.* 11.

140. ——— ———. (Palæoblattariæ.)

Compared with Archimylacris parallela.

Locality: Cannelton, Pa. Horizon: Lower Carboniferous.

1879. Scudder. Mem. Bost. soc. nat. hist., iii: 128. *Pl.* 6, *fig.* 13.
1890. " Foss. ins. N. A., i: 148. *Pl.* 6, *fig.* 13.

141. ——— ———. (Protophasmida.)

Locality: Claxheugh, Durham, England. Horizon: Carboniferous.

1867. Kirkby. Geol. mag., iv: 389. *Pl.* 17, *fig.* 8.
1881. Scudder. Geol. mag., (2), viii: 300.
1883. " Mem. Bost. soc. nat. hist., iii: 223.
1890. " Foss. ins. N. A., i: 245.

Acridites ———. See I, NEUROPT., Idem.

142. Adelophthalmus (Eurypterus) granosus. (Palæoblattariæ.)

Locality: Jägersfreude bei Saarbrück, Germany. Horizon: Carboniferous.

1854. Jordan. Jordan-Meyer, Palaeontogr., iv: 8–12. *Pl.* 2, *figs.* 1–2.
See also Polyzosterites granosus.

143. Ædœophasma anglica. (Protophasmida.)

Locality: Near Liverpool, England. Horizon: Carboniferous.

1885. Scudder. Geol. mag., (3), ii: 265–266.
1885. " Zittel, Handb. palaeont., i, ii: 758. *Fig.* 941.
1886. " Zittel-Barrois, Traité de paléont., ii: 757. *Fig.* 957.
1886. " Bull. U. S. geol. surv., No. 31: 41.

Anthracoblattina abnormis. See Blattina (Anthracoblattina) abnormis.

144. Anthracoblattina camerata. (Palæoblattariæ.)

Locality: Dudweiler, Germany. Horizon: Carboniferous.

1883. Kliver. Neue blatt. Saarbrück., 3–4. *Pl.* 1, *figs.* 1, 1*a*.
1883. " Palaeontogr., xxix: 251–252. *Pl.* 34, *figs.* 1, 1*a*.

145. Anthracoblattina dresdensis. (Palæoblattariæ.)

Locality: Klein Opitz, Saxony. Horizon: Upper Carboniferous.

1879. Scudder. Mem. Bost. soc. nat. hist., iii: 92–93. *Fig.*
1890. " Foss. ins. N. A., i: 112–113. *Fig.*
See also Blattina dresdensis.

146. Anthracoblattina incerta. (Palæoblattariæ.)

Locality: Saarbrück, Germany. Horizon: Carboniferous.

1883. Kliver. Neue blatt. Saarbrück., 5–6. *Pl.* 1, *figs.* 2, 2*a*.
1883. " Palaeontogr., xxix: 253–254. *Pl.* 34, *figs.* 2, 2*a*.

Anthracoblattina lubnensis. See Blattina (Anthracoblattina) lubnensis.

147. Anthracoblattina porrecta. (Palæoblattariæ.)

Locality: Weissig, Germany. Horizon: Lower Dyas.

1879. Scudder. Mem. Bost. soc. nat. hist., iii: 93–94. *Pl.* 4, *fig.* 5.
1890. " Foss. ins. N. A., i: 113–114. *Pl.* 4, *fig.* 5.
See also Blattina porrecta, B. (Anthracoblattina) porrecta.

148. Anthracoblattina remigii. (Palæoblattariæ.)

Locality: Cusel, Rheinpfalz. Horizon: Upper Carboniferous.

1879.	Scudder.	Mem. Bost. soc. nat. hist., iii: 95–96. *Pl.* 4, *fig.* 2.
1890.	"	Foss. ins. N. A., i: 115–116. *Pl.* 4, *fig.* 2.

See also Blattina remigii.

149. Anthracoblattina rückerti. (Palæoblattariæ.)

Locality: Stockheim, Oberfranken. Horizon: Dyas.

1879.	Scudder.	Mem. Bost. soc. nat. hist., iii: 96–97. *Pl.* 4, *fig.* 1.
1890.	"	Foss. ins. N. A., i: 116–117. *Pl.* 4, *fig.* 1.

See also Blattina rückerti.

150. Anthracoblattina scudderi. (Palæoblattariæ.)

Locality: Wemmetsweiler, Germany. Horizon: Carboniferous.

1881.	Goldenberg.	Zeitschr. ges. naturwiss., (3), vi: 186–187. *Figs.* 1–2, on *p.* 185.
1883.	Kliver.	Neue blatt. Saarbrück., 10. *Pl.* 2, *fig.* 7.
1883.	"	Palaeontogr., xxix: 258. *Pl.* 35, *fig.* 7.
1886.	"	Palaeontogr., xxxii: 104. *Pl.* 14, *fig.* 4.

151. Anthracoblattina sopita. (Palæoblattariæ.)

Locality: Weissig, Germany. Horizon: Lower Dyas.

1879.	Scudder.	Mem. Bost. soc. nat. hist., iii: 89–91. *Pl.* 4, *fig.* 8.
1890.	"	Foss. ins. N. A., i: 109–111. *Pl.* 4, *fig.* 8.

See also Blattina didyma, etc.

152. Anthracoblattina spectabilis. (Palæoblattariæ.)

Localities: Löbejün, Weissig?, Germany. Horizon: Upper Carboniferous, Lower Dyas?

1879.	Scudder.	Mem. Bost. soc. nat. hist., iii: 88–89. *Pl.* 2, *fig.* 8.
1890.	"	Foss. ins. N. A., i: 108–109. *Pl.* 2, *fig.* 8.

See also Blattina spectabilis, Blattina (Anthracoblattina) cf. spectabilis.

153. Anthracoblattina wagneri. (Palæoblattariæ.)

Locality: Löbejün, Saxony. Horizon: Carboniferous.

1886.	Kliver.	Palaeontogr., xxxii: 114. *Pl.* 14, *figs.* 12, 12*a*.

154. Anthracoblattina winteriana. (Palæoblattariæ.)

Locality: Dudweiler, Germany. Horizon: Middle Carboniferous.

1879.	Scudder.	Mem. Bost. soc. nat. hist., iii: 94–95. *Pl.* 4, *fig.* 12.
1890.	"	Foss. ins. N. A., i: 114–115. *Pl.* 4, *fig.* 12.

See also Blattina winteriana.

155. Archæoptilus ingens. (Protophasmida.)

Locality: Chesterfield, Derbyshire, England. Horizon: Carboniferous.

1881.	Scudder.	Geol. mag., (2), viii: 295, 300.
1883.	"	Mem. Bost. soc. nat. hist., iii: 217–219, 223. *Pl.* 17, *figs.* 10-12.
1885.	Brongniart.	Bull. soc. amis sc. Rouen, (3), xxi: 60.
1885.	"	Rev. scient., (3), xxxvi: 277.
1885.	"	Geol. mag., (3), ii: 487.
1885.	"	Trans. geol. soc. Manch., xviii: 280.
1885.	"	Foss. ins. prim. rocks, 11.
1885.	"	Jahrb. geol. reichsanst., xxxv: 656.
1885.	Scudder.	Zittel, Handb. palaeont., i, th. ii: 757.

1886.	Scudder.	Zittel-Barrois, Traité de paléont., ii: 756.
1886.	"	Bull. U. S. geol. surv., No. 31: 40.
1890.	"	Foss. ins. N. A., i: 239–241, 245. *Pl.* 11, *figs.* 10–12.

See also Dictyoneura ingens.

156. **Archæoptilus lucasi.** (Protophasmida.)

Locality: Commentry, France. Horizon: Carboniferous.

1885.	Brongniart.	Bull. soc. amis sc. Rouen, (3), xxi: 60.
1885.	"	Rev. scient., (3), xxxvi: 277.
1885.	"	Geol. mag., (3), ii: 487.
1885.	"	Trans. geol. soc. Manch., xviii: 280.
1885.	"	Foss. ins. prim. rocks, 11.
1885.	"	Jahrb. geol. reichsanst., xxxv: 656.

157. **Archegogryllus priscus.** (Protophasmida?)

Locality: Tallmadge, Ohio. Horizon: Carboniferous.

1868.	Scudder.	Proc. Bost. soc. nat. hist., xi: 402–403.
1868.	"	Entom. notes, i: 8–9.
1883.	Lacoe.	List pal. foss. ins., 5.
1885.	Scudder.	Mem. Bost. soc. nat. hist., iii: 323. *Pl.* 29, *figs*, 2, 3.
1885.	Brongniart.	Bull. soc. amis sc. Rouen, (3), xxi: 60.
1885.	"	Rev. scient., (3), xxxvi: 277.
1885.	"	Geol. mag., (3), ii: 487.
1885.	"	Trans. geol. soc. Manch., xviii: 279.
1885.	"	Foss. ins. prim. rocks, 11.
1885.	"	Jahrb. geol. reichsanst., xxxv: 656.
1885.	Scudder.	Zittel, Handb. palaeont., i, ii: 758.
1886.	"	Zittel-Barrois, Traité de paléont., ii: 758.
1886.	"	Bull. U. S. geol. surv., No. 31: 41.
1886.	Brauer.	Ann. naturhist. hofmus., i: 113.
1889.	Lesley.	Dict. foss. Penns., i: p. vi.
1890.	Miller.	N. A. geol. and pal., 575.
1890.	Scudder.	Foss. ins. N. A., i: 287. *Pl.* 15, *figs.* 2, 3.

Archimulacris acadicus. See Archimylacris acadica.

158. **Archimylacris acadica.** (Palæoblattariæ.)

Locality: Pictou, N. S. Horizon: Middle Carboniferous.

1868.	Scudder.	Dawson, Acad. geol., 2d ed., 388 (Archimulacris acadicus). *Fig.* 153.
1868.	Scudder.	Amer. nat., i: 630. *Pl.* 16, *fig.* 2.
1868.	"	Geol. mag., v: 177.
1872.	Packard.	Guide ins., 3d ed., 78. *Pl.* 1, *fig.* 2.
1879.	Scudder.	Mem. Bost. soc. nat. hist., iii: 84–85. *Pl.* 6, *figs.* 8, 14.
1879.	Nicholson.	Manual palæont., 2d ed., i: 407. *Fig.* 258.
1880.	Dawson.	Dawn of life, 146. *Fig.* 127*a*.
1883.	Lacoe.	List pal. foss. ins., 5.
1889.	Lesley.	Dict. foss. Penns., i: p. vi.
1889.	Miller.	N. A. geol. and pal., 575. *Fig.* 1075 (not 1074).
1890.	Scudder.	Foss. ins. N. A., i: 104–105. *Pl.* 6, *figs.* 8, 14.

159. **Archimylacris parallela.** (Palæoblattariæ.)

Locality: Cannelton, Pa. Horizon: Lower Carboniferous.

1879.	Scudder.	Mem. Bost. soc. nat. hist., iii: 85–87 (parallelum). *Pl.* 6, *fig.* 6.
1883.	Lacoe.	List pal. foss. ins., 5.

1889. Lesley. Dict. foss. Penna., i: 37. *Fig.*
1889. Miller. N, A. geol. and pal., 575.
1890. Scudder. Foss. ins. N. A., i: 105–107. *Pl.* 6, *fig.* 6.

160. **Archimylacris paucinervis.** (Palæoblattariæ.)

Locality: Mazon Creek, Ill. Horizon: Carboniferous.

1883. Scudder. Mss. (paucinerve).
1883. Lacoe. List pal. foss. ins., 5.
1889. Lesley. Dict. foss. Penna., i: p. vi.
1890. Scudder. Mem. Bost. soc. nat. hist., iv: 411–414. *Pl.* 31, *fig.* 5.
1890. " Foss. ins. N. A., i: 387–390. *Pl.* 23, *fig.* 5.

161. **Blatta ——.** (Palæoblattariæ.)

Locality: Claxheugh, Durham. Horizon: Carboniferous.

1867. Kirkby. Geol. mag., iv: 389. *Pl.* 17, *figs.* 6–7.
See also Blattidium mantidioides, etc.

162. **Blatta americana.** (Palæoblattariæ.)

Locality: Bristol, R. I. Horizon: Carboniferous.

1884. Clark. Proc. Newp. nat. hist. soc., ii: 12 (undescr.).
See also Mylacris packardii.

163. **Blatta germari.** (Palæoblattariæ.)

Locality: Wettin, Saxony. Horizon: Carboniferous.

1856. Giebel. Insect. d. vorwelt, 321.
See also Blattina —— Germ., Blattina germari, Gerablattina germari.

164. **Blatta gracilis.** (Palæoblattariæ.)

Locality: Lebach, Germany. Horizon; Lower Dyas.

1856. Giebel. Insect. d. vorwelt, 321.
See also Blattina gracilis, Petrablattina gracilis.

165. **Blatta helvetica.** (Palæoblattariæ.)

Locality: Erbignon, Switzerland. Horizon: Carboniferous.

1876. Heer. Prim. world Switz., i: 20. *Pl.* 16C, *Figs. a, b.*
1877. Woodward. Geol. mag., (2), iv: 79. *Figs.* 1*a, b.*
See also Blattina helvetica, Progonoblattina helvetica.

166. **Blattidium mantidioides.** (Palæoblattariæ.)

Locality: England. Horizon: Upper Carboniferous.

1877. Goldenberg. Fauna saræp. foss., ii: 20.
See also Blatta —— Kirkby, Etoblattina mantidioides.

167. **Blattina ——.** (Palæoblattariæ.)

Locality: Belgium. Horizon: Carboniferous.

1877. Andrä. Sitzungsb. niederrhein. gesellsch., 1876: 28.

168. **Blattina ——.** (Palæoblattariæ.)

Locality: Wettin, Saxony. Horizon: Carboniferous.

1851. Germar. Verstein. steink. Wettin, 87. *Pl.* 31, *fig.* 9.
See also Blatta germari, etc.

169. Blattina ———. (Palæoblattariæ.)

Locality: Lubná, Bohemia. **Horizon**: Carboniferous.

1883. Kušta. Sitzungsb. k. böhm. gesellsch. wiss., 1883: 214. *Fig.* 3.
1884. " Vesmír, xiii: 97–98. *Fig.* 5.

Blattina ———. See Gerablattina balteata.

170. Blattina (Anthracoblattina) abnormis. (Palæoblattariæ.)

Locality: Weissig, Germany. **Horizon**: Lower Dyas.

1880. Geinitz. Blatt. unt. dyas Weissig, 3–16. *Pl.* 39. *figs.* 1–3.
1880. " Verhandl. leop-carol. akad. naturf., xli: 423–436. *Pl.* 39, *figs.* 1–3.

See also Anthracoblattina sopita, Blattina didyma, etc.

171. Blattina affinis. (Palæoblattariæ.)

Locality: Löbejün, Saxony. **Horizon**: Carboniferous.

1869. Goldenberg. Neues jahrb. f. mineral., 1869: 159. *Pl.* 3, *fig.* 3.
1877. " Fauna saræp. foss., ii: 19.

See also Etoblattina affinis.

172. Blattina anaglyptica. (Palæoblattariæ.)

Locality: Germany. **Horizon**: Carboniferous.

1842. Germar. Münst., Beitr. petref, v: 92. *Pl.* 13, *fig.* 2.
1851. " Verstein. steink. Wettin, 84. *Pl.* 31, *fig.* 4.
1852. Giebel. Deutschl. petref., 637.
1856. " Insect. d. vorwelt, 314–315.
1864. Heer. Viert. naturf. gesellsch. Zürich, ix: 287.
1877. Goldenberg. Fauna saræp. foss., ii: 19.

See also B. anthracophila, B. anaglyptica var. labachensis, B. labachensis, Etoblattina anaglyptica, Etoblattina anthracophila.

173. Blattina anaglyptica var. labachensis. (Palæoblattariæ.)

Locality: Labach, Germany. **Horizon**: Carboniferous.

1867. Goldenberg. Vorweltl. fauna steink. Saarbr., 16. *Pl.* 2, *fig.* 15 (ined.)
1873. " Fauna saræp. foss., i: 16. *Pl.* 2, *fig.* 15.
1877. " Fauna saræp. foss., ii: 19.

See also B. anaglyptica, etc.

174. Blattina anthracophila. (Palæoblattariæ.)

Locality: Weissig, Germany. **Horizon**: Lower Dyas.

1842. Germar. Münster, Beitr. z. petref., v: 92–93. *Pl.* 13, *fig.* 3.
1852. Giebel. Deutschl. petref., 637.
1864. Heer. Viert. naturf. gesellsch. Zürich, ix: 287 (= B. anaglyptica?)
1873. E. Geinitz. Neues jahrb. f. mineral., 1873: 694. *Pl.* 3, *fig.* 2.
1873. " Verstein. unter. dyas Weissig, 4. *Pl.* 3, *fig.* 2.
1876. Roemer. Lethæa geogn. *Pl.* 56, *fig.* 2*a*.

See also B. anaglyptica, etc., Etoblattina anthracophila.

175. Blattina (Etoblattina) bituminosa. (Palæoblattariæ.)

Locality: Lubná, Bohemia. **Horizon**: Carboniferous.

1883. Kušta. Sitzungsb. k. böhm. gesellsch. wiss., 1883: 213–214. *Fig.* 1.
1884. " Vesmír, xiii: 97–98. *Fig.* 3.

176. Blattina bretonensis. (Palæoblattariæ.)

Locality: Sydney, Cape Breton. Horizon: Carboniferous.

1874. Scudder. Can. nat., vii: 271–272. *Fig.* 1.
1878. Dawson. Acad. geol., suppl. 2d. ed., 55. *Fig.* 5.
1880. " Dawn of life, 146. *Fig.* 127*b*.

See also Mylacris bretonensis.

177. Blattina carbonaria. (Palæoblattariæ.)

Compared with Hormetica tuberculata. S. Amer.

Localities: Weissig, Wettin, Germany. Horizon: Carboniferous.

1851. Germar. Verstein. steink. Wettin, 85–86. *Pl.* 31, *fig.* 6*a*–*b*.
1856. Giebel. Insect. d. vorwelt, 315.
1864. Heer. Viert. naturf. gesellsch. Zürich, ix: 287, No. 3.
1875. E. Geinitz. Neues jahrb. f. mineral., 1875: 5.
1875. " Neue aufschl. dyas Weissig, 5.
1877. Goldenberg. Fauna saræp. foss., ii: 19.

See also Etoblattina carbonaria, etc.; also I, NEUROPT., Blattina carbonaria.

178. Blattina (Etoblattina) carbonaria var. deichmülleri. (Palæoblattariæ.)

Locality: Weissig, Germany. Horizon: Lower Dyas.

1880. Geinitz. Blatt. unter. dyas Weissig, 19–20. *Pl.* 39, *fig.* 9.
1880. " Verhandl. leop.-carol. akad. naturf., xli: 439–440. *Pl.* 39. *fig.* 9.

See also Etoblattina carbonaria, etc.

179. Blattina clathrata. (Palæoblattariæ.)

Locality: Manebach, Thüringen. Horizon: Carboniferous.

1864. Heer. Viert. naturf. gesellsch. Zürich, ix: 288, 294–296. *Pl.*, *fig.* 3.
1877. Goldenberg. Fauna saræp. foss., ii: 19.

See also B. latinervis, Gerablattina clathrata.

Blattina (Etoblattina) deichmülleri. See Blattina (Etoblattina) carbonaria var. deichmülleri.

180. Blattina didyma. (Palæoblattariæ.)

Localities: Weissig, Wettin, Germany. Horizon: Carboniferous.

1842. Germar. Münster, Beitr. z. petref., v: 92. *Pl.* 13, *fig.* 1*a*–*b*.
1848. Giebel. Gæa excurs. germ. *Pl.* 5, *fig.* 26.
1851. Germar. Verstein. steink. Wettin, 83. (See also 87 and pl. xxxi: 10.) *Pl.* 31, *figs.* 2–3.
1852. Giebel. Deutschl. petref., 637.
1852. Quenstedt. Handb. petref. *Pl.* 24, *fig.* 16.
1854. Pictet. Traité de paléont., 2e éd., ii: 362. *Pl.* 40, *fig.* 2.
1856. Giebel. Insect. d. vorwelt, 314.
1864. Heer. Viert. naturf. gesellsch. Zürich, ix: 287.
1875. E. Geinitz. Neues jahrb. f. mineral., 1875: 4–5. *Pl.* 1, *fig.* 1.
1875. " Neue aufschl. dyas Weissig, 4–5. *Pl.* 1, *fig.* 1.
1877. Goldenberg. Fauna saræp. foss., ii: 19.
1880. E. Geinitz. Blatt. unter. dyas Weissig. *Pl.* 39, *figs.* 4–5.
1880. " Verhandl. leop.-carol. akad. naturf., xli. *Pl.* 39, *figs.* 4–5.

See also Etoblattina didyma, Anthracoblattina sopita, Dictyopteris didyma, Blattina (Anthracoblattina) abnormis; also I, NEUROPT., Blattina carbonaria, and III, ORTHOPT., Blatta didyma.

181. Blattina dresdensis. (Palæoblattariæ.)

Locality: Klein-Opitz, Saxony. Horizon: Upper Carboniferous.

1879. Gein.-Deichm. Sitzungsb. naturw. gesellsch. Isis, 1879: 12–13. 2 *figs.*
See also Anthracoblattina dresdensis.

182. Blattina (Etoblattina) elongata. (Palæoblattariæ.)

Locality: Weissig, Germany. Horizon: Lower Dyas.

1880. Geinitz. Blatt. unter. dyas Weissig, 20. *Pl.* 39, *fig.* 10.
1880. " Verhandl. leop.-carol. akad. naturf., xli: 440. *Pl.* 39, *fig.* 10.
See also Etoblattina elongata, etc.

183. Blattina euglyptica. (Palæoblattariæ.)

Locality: Wettin, Saxony. Horizon: Carboniferous.

1851. Germar. Verstein. steink. Wettin, 86–87. *Pl.* 31, *figs.* 7*a–b*, 8.
1856. Giebel. Insect. d. vorwelt, 315.
1864. Heer. Viert. naturf. gesellsch. Zürich, ix: 287.
1869. Goldenberg. Neues jahrb. f. mineral., 1869: 162–163. *Pl.* 3, *figs.* 8–9.
1877. " Fauna saræp. foss., ii: 19.
See also B. euglyptica var. weissiana, Gerablattina producta, Etoblattina euglyptica, E. dohrnii.

184. Blattina euglyptica var. weissiana. (Palæoblattariæ.)

Locality: Brücken, Canton Waldmohr (Rheinpfalz). Horizon: Carboniferous.

1869. Goldenberg. Neue jahrb. f. mineral., 1869: 163. *Pl.* 3, *fig.* 10.
1877. " Fauna saræp. foss., ii: 19. *Pl.* 1, *fig.* 12.
See also Blattina euglyptica, etc., B. weissiana, Gerablattina weissiana.

185. Blattina fascigera. (Palæoblattariæ.)

Locality: Pittston, Pa. Horizon: Carboniferous.

1878. Scudder. Proc. Bost. soc. nat. hist., xix: 238–239.
1878. " Entom. notes, vi: 35–36.
See also Gerablattina fascigera.

186. Blattina flabellata. (Palæoblattariæ.)

Locality: Wettin, Saxony. Horizon: Carboniferous.

1842. Germar. Münster, Beitr. z. petref., v: 92. *Pl.* 13, *fig.* 4*ab*.
1851. " Verstein. steink. Wettin, 84–85. *Pl.* 31, *fig.* 5.
1852. Giebel. Deutschl. petref., 637.
1856. " Insect. d. vorwelt, 315.
1864. Heer. Viert. naturf. gesellsch. Zürich, ix: 287.
1877. Goldenberg. Fauna saræp. foss., ii: 19.
1880. E. Geinitz. Blatt. unter. dyas Weissig. *Pl.* 39, *fig.* 8.
1880. " Verhandl. leop.-carol. akad. naturf., xli: *Pl.* 39, *fig.* 8.
See also Gerablattina münsteri, Etoblattina flabellata, Blattina (Etoblattina) flabellata var. dyadica, Etoblattina flabellata var. stelzneri.

187. Blattina (Etoblattina) flabellata var. dyadica. (Palæoblattariæ.)

Locality: Weissig, Germany. Horizon: Lower Dyas.

1880. E. Geinitz. Blatt. unter. dyas Weissig, 17–18. *Pl.* 39, *fig.* 7.
1880. " Verhandl. leop.-carol. akad. naturf., xli: 437–438. *Pl.* 39, *fig.* 7.
See also Blattina flabellata, etc.

188. Blattina fritschii. (Palæoblattariæ.)

Locality: Manebach, Thüringen. Horizon: Carboniferous.

1864. Heer. Viert. naturf. gesellsch. Zürich, ix: 287, 293–294. *Pl.*, *fig.* 2.
1877. Goldenberg. Fauna saræp. foss., ii: 19.
See also Progonoblattina fritschii.

189. Blattina geinitzi. (Palæoblattariæ.)

Locality: Löbejün, Saxony. Horizon: Carboniferous.

1869. Goldenberg. Neues jahrb. f. mineral., 1869: 160–161. *Pl.* 3, *fig.* 5.
1877. " Fauna saræp. foss., ii: 19.
See also Gerablattina geinitzi.

190. Blattina germari. (Palæoblattariæ.)

Locality: Wettin, Saxony. Horizon: Carboniferous.

1864. Heer. Viert. naturf. gesellsch. Zürich, ix: 288.
1877. Goldenberg. Fauna saræp. foss., ii: 19.
See also Blatta germari, etc.

191. Blattina goldenbergi. (Palæoblattariæ.)

Localities: Ilmenau, Manebach, Germany. Horizon: Carboniferous.

1870. Mahr. Neues jahrb. f. mineral., 1870: 282–284. *Fig.* 1.
1877. Goldenberg. Fauna saræp. foss., ii: 19.
See also Gerablattina goldenbergi.

192. Blattina gracilis. (Palæoblattariæ.)

Locality: Lebach bei Saarbrück, Germany. Horizon: Lower Dyas.

1854. Goldenberg. Palaeontogr., iv: 23. *Pl.* 3, *figs.* 3, 3*a*.
1854. " Foss. insect. Saarbrücken, 7. *Pl.* 1, *figs.* 3, 3*a*.
1864. Heer. Viert. naturf. gesellsch. Zürich, ix: 288.
1877. Goldenberg. Fauna saræp. foss., ii: 20, 27–28, 51. *Pl.* 2, *fig.* 1*a*.
See also Blatta gracilis, Petrablattina gracilis.

193. Blattina heeri. (Palæoblattariæ.)

Locality: Sydney, Cape Breton. Horizon: Carboniferous.

1874. Scudder. Can. nat., vii: 272. *Fig.* 2, *p.* 271.
1878. Dawson. Acad. geol., suppl. 2d ed., 55. *Fig.* 6.
1880. " Dawn of life, 146 (heeri). *Fig.* 127*c*.
See also Mylacris heeri.

194. Blattina helvetica. (Palæoblattariæ.)

Locality: Erbignon, Switzerland. Horizon: Carboniferous.

1864. Heer. Viert. naturf. gesellsch. Zürich, ix: 287, 291–293. *Pl.*, *fig.* 1.
1865. " Urwelt der Schweiz, 592 note.
1872. " Monde prim. Suisse, 22. *Fig.* 16*Cab*.
1877. Goldenberg. Fauna saræp. foss., ii: 19.
1879. Heer. Urwelt der Schweiz, 2^e^ aufl., 24. *Fig.* 34*ab*.
See also Blatta helvetica, Progonoblattina helvetica.

Blattina hesri. See Blattina heeri.

195. Blattina insignis. (Palæoblattariæ.)

Locality: Skalley-Schacht, Hirschbach, Germany. Horizon: Carboniferous.

1867. Goldenberg. Vorweltl. fauna steink. Saarbr., 17. *Pl.* 2, *fig.* 14 (ined.).
1873. " Fauna saræp. foss., i: 17. *Pl.* 2, *fig.* 14.
1877. " Fauna saræp. foss., ii: 20, 51.
1879. Scudder. Mem. Bost. soc. nat. hist., iii: 19 note 4.
1880. " Arch. sc. phys. nat., (3), iii: 367 note 2.
1887. Woodward. Geol. mag., (3), iv. *Pl.* 12, *fig.* 3.
1890. Scudder. Foss. ins. N. A., i: 39 note 4.

See also Etoblattina insignis, etc.

196. Blattina intermedia. (Palæoblattariæ.)

Locality: Wemmetsweiler, Germany. Horizon: Carboniferous.

1877. Goldenberg. Fauna saræp. foss., ii: 19, 24–25, 51. *Pl.* 1, *figs.* 10, 10*a*.

See also Gerablattina intermedia, etc.

197. Blattina (Gerablattina) intermedia. (Palæoblattariæ.)

Locality: Wemmetsweiler, Germany. Horizon: Upper Carboniferous.

1883. Kliver. Neue blatt. Saarbr., 9–10. *Pl.* 2, *figs.* 2, 2*a*.
1883. " Palaeontogr., xxix: 257–258. *Pl.* 35, *figs.* 2, 2*a*.

See also Gerablattina intermedia, etc.

198. Blattina labachensis. (Palæoblattariæ.)

Locality: Labach, Germany. Horizon: Upper Carboniferous.

1877. Goldenberg. Fauna saræp. foss., ii: 51.

See also Etoblattina labachensis, B. anaglyptica var. labachensis, Blattina anaglyptica, etc.

199. Blattina (Etoblattina) lanceolata. (Palæoblattariæ.)

Locality: Lugau, Saxony. Horizon: Carboniferous.

1881. Sterzel. Ber. naturw. gesellsch. Chemn., vii: 271–273. *Pl.*, *figs.* 1, 2.

See also Etoblattina lanceolata.

200. Blattina latinervis. (Palæoblattariæ.)

Locality: Manebach, Thüringen. Horizon: Upper Carboniferous.

1864. Heer. Viert. naturf. gesellsch. Zürich, ix: 288, 296–297 (=B. clathrata?). *Pl.*, *fig.* 4.
1877. Goldenberg. Fauna saræp. foss., ii: 20.
1879. Scudder. Mem. Bost. soc. nat. hist., iii: 127–128. *Pl.* 4, *fig.* 3.
1890. " Foss. ins. N. A., i: 147–148. *Pl.* 4, *fig.* 3.

See also Blattina clathrata, Gerablattina clathrata.

201. Blattina lebachensis. (Palæoblattariæ.)

Locality: Lehbach bei Saarbrück, Germany. Horizon: Lower Dyas.

1852. Goldenberg. Sitzungsb. math.-nat. cl. k. akad. wiss. Wien, ix: 38 (lehbachensis) (undescr.).
1854. " Palaeontogr., iv: 22–23. *Pl.* 6, *fig.* 7.
1854. " Foss. insect. Saarbr., 6–7. *Pl.* 4, *fig.* 7.
1856. Giebel. Insect. d. vorwelt, 316.
1877. Goldenberg. Fauna saræp. foss, ii: 20, 27, 51. *Pl.* 1, *fig.* 20.

See also Hermatoblattina lebachensis.

Blattina lehbachensis. See Blattina lebachensis.

202. Blattina leptophlebica. (Palæoblattariæ.)

Locality: Löbejün, Saxony. Horizon: Carboniferous.

1869. Goldenberg. Neues jahrb. f. mineral., 1869: 158–159. *Pl.* 3, *figs.* 1*a*, 1*A*.
1877. " Fauna saræp. foss., ii: 19.
See also Etoblattina leptophlebica.

203. Blattina ligniperda. (Palæoblattariæ.)

Locality: Lubná, Bohemia. Horizon: Carboniferous.

1883. Kušta. Sitzungsb. k. böhm. gesellsch. wiss., 1883: 214. *Fig.* 2.
1884. " Vesmír, xiii: 97–98. *Fig.* 4.

204. Blattina (Anthracoblattina) lubnensis. (Palæoblattariæ.)

Locality: Lubná, Bohemia. Horizon: Carboniferous.

1883. Kušta. Blatt. lubn. gask., 1–8. *Pl.*, *fig.* 1.
1883. " Sitzungsb. k. böhm. gesellsch. wiss., 1882: 430–437. *Pl.*, *fig.* 1.
1884. " Vesmír, xiii: 97–98. *Fig.* 2.

205. Blattina mahri. (Palæoblattariæ.)

Locality: Ilmenau, Manebach, Thüringen. Horizon: Carboniferous.

1870. Goldenberg. Mahr, Neues jahrb. f. mineral., 1870: 284–285. *Fig.* 2*ab*.
1877. " Fauna saræp. foss., ii: 19.
See also Gerablattina mahri.

206. Blattina cf. mahri. (Palæoblattariæ.)

Locality: Weissig, Germany. Horizon: Lower Dyas.

1875. E. Geinitz. Neues jahrb. f. mineral., 1875: 5. *Pl.* 1, *fig.* 2.
1875. " Neue aufschl. dyas Weissig, 5. *Pl.* 1, *fig.* 2.
See also Etoblattina elongata, etc.

207. Blattina manebachensis. (Palæoblattariæ.)

Locality: Manebach, Thüringen. Horizon: Carboniferous.

1869. Goldenberg. Neues jahrb. f. mineral., 1869: 160. *Pl.* 3, *fig.* 4.
1877. " Fauna saræp. foss., ii: 19.
See also Etoblattina manebachensis, Blattina (Etoblattina) manebachensis.

208. Blattina (Etoblattina) manebachensis. (Palæoblattariæ.)

Locality: Manebach, Thüringen. Horizon: Carboniferous.

1883. Kušta. Blatt. lubn. gask., 8. *Pl.*, *fig.* 2.
1883. " Sitzungsb. k. böhm. gesellsch. wiss., 1882: 437. *Pl.*, *fig.* 2.
See also B. manebachensis, Etoblattina manebachensis.

209. Blattina neuropteroidea. (Palæoblattariæ.)

Locality: ? Horizon: Permian.

1864–'65. Göppert. Foss. flora perm. form., 289. *Pl.* 28, *figs.* 17–18.
1864–'65. " Palaeontogr., xii: 289. *Pl.* 28, *figs.* 17–18.

210. Blattina parvula. (Palæoblattariæ.)

Locality: Löbejün, Saxony. Horizon: Carboniferous.

1869. Goldenberg. Neues jahrb. f. mineral., 1869: 161. *Pl.* 3, *fig.* 6.
1877. " Fauna saræp. foss., ii: 19.
See also Etoblattina parvula.

211. **Blattina porrecta.** (Palæoblattariæ.)

Locality: Weissig, Germany. Horizon: Lower Dyas.

1875. E. Geinitz. Neues jahrb. f. mineral., 1875: 6. *Pl.* 1, *fig.* 4.
1875. " Neue aufschl. dyas Weissig, 6. *Pl.* 1, *fig.* 4.
1877. Goldenberg. Fauna saræp. foss., ii: 20.
See also Anthracoblattina porrecta, Blattina (Anthracoblattina) porrecta.

212. **Blattina (Anthracoblattina) porrecta.** (Palæoblattariæ.)

Locality: Weissig, Germany. Horizon: Lower Dyas.

1880. Geinitz. Blatt. unter. dyas Weissig, 21. *Pl.* 39, *fig.* 12.
1880. " Verhandl. leop.-carol. akad. naturf., xli: 441. *Pl.* 39, *fig.* 12.
See also Anthracoblattina porrecta, Blattina porrecta.

213. **Blattina primæva.** (Palæoblattariæ.)

Localities: Auerswald bei Saarbrück, Gersweiler, Germany. Horizon: Carboniferous.

1852. Goldenberg. Sitzungsb. math.-nat. cl. k. akad. wiss. Wien, ix: 38 (undescr.).
1854. " Palaeontogr., iv: 22. *Pl.* 3, *fig.* 4.
1854. " Foss. insect. Saarbrücken, 6. *Pl.* 1, *fig.* 4.
1854–'56. Bronn. Lethæa geogn., 3^e aufl., i, ii: 683. *Pl.* 9^3, *fig.* 15*a*.
1856. Giebel. Insect. d. vorwelt, 316.
1864. Heer. Viert. naturf. gesellsch. Zürich, ix: 288.
1867. Goldenberg. Vorweltl. fauna steink. Saarbr., 16. *Pl.* 2, *fig.* 13 (ined.).
1873. " Fauna saræp. foss., i: 16. *Pl.* 2, *fig.* 13.
1876. Roemer. Lethæa geogn. *Pl.* 47, *fig.* 18.
1877. Goldenberg. Fauna saræp. foss., ii: 19, 51.
See also Etoblattina primæva.

214. **Blattina propria.** (Palæoblattariæ.)

Locality: Saarbrück, Germany. Horizon: Carboniferous.

1883. Kliver. Neue blatt. Saarbr. *Pl.* 2, *fig.* 3.
1883. " Palaeontogr., xxix. *Pl.* 35, *fig.* 3.
See also Etoblattina propria.

215. **Blattina rarinervis** (piece of wing). (Palæoblattariæ.)

Locality: ? Horizon: Permian.

1864–'65. Göppert. Foss. flora perm. form., 289. *Pl.* 28, *figs.* 15–16.
1864–'65. " Palaeontogr., xii: 289. *Pl.* 28, *figs.* 15–16.

216. **Blattina remigii.** (Palæoblattariæ.)

Locality: Cusel, Rheinpfalz. Horizon: Carboniferous.

1867. Dohrn. Palaeontogr., xvi: 133–134. *Pl.* 8, *fig.* 3.
1877. Goldenberg. Fauna saræp. foss., ii: 20, 26–27, 51. *Pl.* 1, *fig.* 13.
See also Anthracoblattina remigii.

217. **Blattina reticulata.** (Palæoblattariæ.)

Locality: Wettin, Saxony. Horizon: Carboniferous.

1851–'53. Germar. Verstein. steink. Wettin, heft 7: 87–88. *Pl*, 39, *fig*, 15*ab* in heft 8.
1852. Giebel. Deutschl. petref., 637.
1856. " Insect. d. vorwelt, 316.
1877. Goldenberg. Fauna saræp. foss., ii: 19.
See also Oryctoblattina reticulata.

218. Blattina rückerti. (Palæoblattariæ.)

Locality: Stockheim, Oberfranken. Horizon: Rothliegende.

1869. Goldenberg. Neues jahrb. f. mineral, 1869: 163–164. *Pl.* 3, *fig.* 11.
See also Anthracoblattina rückerti.

219. Blattina russoma. (Palæoblattariæ.)

Locality: Löbejün, Saxony. Horizon: Carboniferous.

1869. Goldenberg. Neues jahrb. f. mineral., 1869: 159. *Pl.* 3, *figs.* *2a*, *2A–2B*.
1877. " Fauna saræp. foss., ii: 20.
See also Etoblattina russoma.

220. Blattina scaberata. (Palæoblattariæ.)

Locality: Altenwald, Germany. Horizon: Carboniferous.

1877. Goldenberg. Fauna saræp. foss., ii: 19, 25, 51. *Pl.* 1, *fig.* 8.
See also Gerablattina scaberata.

221. Blattina sepulta. (Palæoblattariæ.)

Locality: Cape Breton, Nova Scotia. Horizon: Carboniferous.

1876. Scudder. Proc. Amer. assoc. adv. sc., xxiv B: 111. *Fig.* 2 on *p.* 110.
1876. " Can. nat., n. s., viii: 89–90. *Fig.* 2 [1].
1876. " Ins. carb. Cape Breton, [2]. *Fig.* 2 [1].
1878. Dawson. Acad. geol., suppl. 2d ed., 55. *Fig.* 7.
See also Petrablattina sepulta.

222. Blattina spectabilis. (Palæoblattariæ.)

Localities: Weissig, Löbejün, Germany. Horizon: Carboniferous.

1869. Goldenberg. Neues jahrb. f. mineral., 1869: 161–162. *Pl.* 3, *figs.* 7, *7ab*.
1875. E. Geinitz. Neues jahrb. f. mineral., 1875: 6.
1875. " Neue aufschl. dyas Weissig, 6.
1877. Goldenberg. Fauna saræp. foss., ii: 19.
See also Anthracoblattina spectabilis, etc.

223. Blattina (Anthracoblattina) cf. spectabilis. (Palæoblattariæ.)

Locality: Weissig, Germany. Horizon: Lower Dyas.

1880. Geinitz. Blatt. unter. dyas Weissig, 17. *Pl.* 39, *fig.* 6.
1880. " Verhandl. leop.-carol. akad. naturf., xli: 437. *Pl.* 39, *fig.* 6.
See also Anthracoblattina spectabilis, etc.

224. Blattina splendens (abdomen). (Palæoblattariæ.)

Locality: ? Horizon: Permian.

1864–'65. Göppert. Foss. flora perm. form., 289. *Pl.* 64, *fig.* 11.
1864–'65. " Palaeontogr., xii: 289. *Pl.* 64, *fig.* 11.

225. Blattina tischbeini. (Palæoblattariæ.)

Locality: Hirschbach, Germany. Horizon: Middle Carboniferous.

1867. Goldenberg. Vorweltl. fauna steink. Saarbr., 16–17. *Pl.* 2, *fig.* 16 (ined.).
1873. " Fauna saræp. foss., i: 16–17. *Pl.* 2, *fig.* 16.
1877. " Fauna saræp. foss., ii: 19, 51.
1879. Scudder. Mem. Bost. soc. nat. hist., iii: 127. *Pl.* 4, *fig.* 10.
1890. " Foss. ins. N. A., i: 147. *Pl.* 4, *fig.* 10.

226. Blattina venosa. (Palæoblattariæ.)

Locality: Wemmetsweiler, Germany. Horizon: Upper Carboniferous.

1877. Goldenberg. Fauna saræp. foss., ii: 19, 25, 51. *Pl.* 1, *fig.* 7.
1879. Scudder. Mem. Bost. soc. nat. hist., iii: 128. *Pl.* 4, *fig.* 6.
1890. " Foss. ins. N. A., i: 148. *Pl.* 4, *fig.* 6.

227. Blattina venusta. (Palæoblattariæ.)

Locality: Frog Bayou, Ark. Horizon: Carboniferous.

1860. Lesquereux. Owen, 2d rep. geol. Ark., 314. *Pl.* 5, *fig.* 11.
1864. Heer. Viert. naturf. gesellsch. Zürich, ix: 287.
1868. Scudder. Geol. mag., v: 176–177.
1877. Goldenberg. Fauna saræp. foss., ii: 19.
See also Etoblattina venusta.

228. Blattina weissiana. (Palæoblattariæ.)

Locality: Brücken, Canton Waldmohr, Rheinpfalz. Horizon: Carboniferous.

1877. Goldenberg. Fauna saræp. foss., ii: 26, 51.
See also B. euglyptica var. weissiana, etc.

229. Blattina weissigensis. (Palæoblattariæ.)

Locality: Weissig, Germany. Horizon: Lower Dyas.

1873. E. Geinitz. Neues jahrb. f. mineral., 1873: 692–693. *Pl.* 3, *fig.* 1.
1873. " Verstein. unter. dyas Weissig, 2–4. *Pl.* 3, *fig.* 1.
1875. " Neues jahrb. f. mineral., 1875: 6.
1875. " Neue aufschl. dyas Weissig, 6.
See also Etoblattina weissigensis, Blattina (Etoblattina) weissigensis.

230. Blattina (Etoblattina) weissigensis. (Palæoblattariæ.)

Locality: Weissig, Germany. Horizon: Lower Dyas.

1880. Geinitz. Blatt. unter. dyas Weissig, 21. *Pl.* 39, *fig.* 11.
1880. " Verhandl. leop.-carol. akad. naturf., xli: 441. *Pl.* 39, *fig.* 11.
See also Etoblattina weissigensis, Blattina weissigensis.

231. Blattina wemmetsweileriensis. (Palæoblattariæ.)

Locality: Wemmetsweiler, Germany. Horizon: Carboniferous.

1877. Goldenberg. Fauna saræp. foss., ii: 19, 24, 51. *Pl.* 1, *fig.* 9.
See also Hermatoblattina wemmetsweileriensis, etc.

232. Blattina (Hermatoblattina) wemmetsweileriensis. (Palæoblattariæ.)

Locality: Wemmetsweiler, Germany. Horizon: Carboniferous.

1883. Kliver. Neue blatt. Saarbrücken. *Pl.* 1, *figs.* 4, 4*a*.
1883. " Palaeontogr., xxix. *Pl.* 34, *figs.* 4, 4*a*.
See also Hermatoblattina wemmetsweiliensis, etc.

233. Blattina winteriana. (Palæoblattariæ.)

Locality: Dudweiler, Germany. Horizon: Carboniferous.

1870. Goldenberg. Neues jahrb. f. mineral., 1870: 288–289. *Figs.* 1–4.
1877. " Fauna saræp. foss., ii: 19, 25–26, 51. *Pl.* 1, *fig.* 11.
See also Anthracoblattina winteriana.

218. Blattina rückerti. (Palæoblattariæ.)

Locality: Stockheim, Oberfranken. **Horizon:** Rothliegende.

1869. Goldenberg. Neues jahrb. f. mineral, 1869: 163–164. *Pl.* 3, *fig.* 11.
See also Anthracoblattina rückerti.

219. Blattina russoma. (Palæoblattariæ.)

Locality: Löbejün, Saxony. **Horizon:** Carboniferous.

1869. Goldenberg. Neues jahrb. f. mineral., 1869: 159. *Pl.* 3, *figs.* 2*a*, 2*A*–2*B*.
1877. " Fauna saræp. foss., ii: 20.
See also Etoblattina russoma.

220. Blattina scaberata. (Palæoblattariæ.)

Locality: Altenwald, Germany. **Horizon:** Carboniferous.

1877. Goldenberg. Fauna saræp. foss., ii: 19, 25, 51. *Pl.* 1, *fig.* 8.
See also Gerablattina scaberata.

221. Blattina sepulta. (Palæoblattariæ.)

Locality: Cape Breton, Nova Scotia. **Horizon:** Carboniferous.

1876. Scudder. Proc. Amer. assoc. adv. sc., xxiv B: 111. *Fig.* 2 on *p.* 110.
1876. " Can. nat., n. s., viii: 89-90. *Fig.* 2 [1].
1876. " Ins. carb. Cape Breton, [2]. *Fig.* 2 [1].
1878. Dawson. Acad. geol., suppl. 2d ed., 55. *Fig.* 7.
See also Petrablattina sepulta.

222. Blattina spectabilis. (Palæoblattariæ.)

Localities: Weissig, Löbejün, Germany. **Horizon:** Carboniferous.

1869. Goldenberg. Neues jahrb. f. mineral., 1869: 161–162. *Pl.* 3, *figs.* 7, 7*ab*.
1875. E. Geinitz. Neues jahrb. f. mineral., 1875: 6.
1875. " Neue aufschl. dyas Weissig, 6.
1877. Goldenberg. Fauna saræp. foss., ii: 19.
See also Anthracoblattina spectabilis, etc.

223. Blattina (Anthracoblattina) cf. spectabilis. (Palæoblattariæ.)

Locality: Weissig, Germany. **Horizon:** Lower Dyas.

1880. Geinitz. Blatt. unter. dyas Weissig, 17. *Pl.* 39, *fig.* 6.
1880. " Verhandl. leop.-carol. akad. naturf., xli: 437. *Pl.* 39, *fig.* 6.
See also Anthracoblattina spectabilis, etc.

224. Blattina splendens (abdomen). (Palæoblattariæ.)

Locality: ? **Horizon:** Permian.

1864–'65. Göppert. Foss. flora perm. form., 289. *Pl.* 64, *fig.* 11.
1864–'65. " Palaeontogr., xii: 289. *Pl.* 64, *fig.* 11.

225. Blattina tischbeini. (Palæoblattariæ.)

Locality: Hirschbach, Germany. **Horizon:** Middle Carboniferous.

1867. Goldenberg. Vorweltl. fauna steink. Saarbr., 16–17. *Pl.* 2, *fig.* 16 (ined.).
1873. " Fauna saræp. foss., i: 16–17. *Pl.* 2, *fig.* 16.
1877. " Fauna saræp. foss., ii: 19, 51.
1879. Scudder. Mem. Bost. soc. nat. hist., iii: 127. *Pl.* 4, *fig.* 10.
1890. " Foss. ins. N. A., i: 147. *Pl.* 4, *fig.* 10.

226. **Blattina venosa.** (Palæoblattariæ.)

Locality: Wemmetsweiler, Germany. Horizon: Upper Carboniferous.

1877. Goldenberg. Fauna saræp. foss., ii: 19, 25, 51. *Pl.* 1, *fig.* 7.
1879. Scudder. Mem. Bost. soc. nat. hist., iii: 128. *Pl.* 4, *fig.* 6.
1890. " Foss. ins. N. A., i: 148. *Pl.* 4, *fig.* 6.

See also Etoblattina venosa.

227. **Blattina venusta.** (Palæoblattariæ.)

Locality: Frog Bayou, Ark. Horizon: Carboniferous.

1860. Lesquereux. Owen, 2d rep. geol. Ark., 314. *Pl.* 5, *fig.* 11.
1864. Heer. Viert. naturf. gesellsch. Zürich, ix: 287.
1868. Scudder. Geol. mag., v: 176–177.
1877. Goldenberg. Fauna saræp. foss., ii: 19.

See also Etoblattina venusta.

228. **Blattina weissiana.** (Palæoblattariæ.)

Locality: Brücken, Canton Waldmohr, Rheinpfalz. Horizon: Carboniferous.

1877. Goldenberg. Fauna saræp. foss., ii: 26, 51.

See also B. euglyptica var. weissiana, etc.

229. **Blattina weissigensis.** (Palæoblattariæ.)

Locality: Weissig, Germany. Horizon: Lower Dyas.

1873. E. Geinitz. Neues jahrb. f. mineral., 1873: 692–693. *Pl.* 3, *fig.* 1.
1873. " Verstein. unter. dyas Weissig, 2–4. *Pl.* 3, *fig.* 1.
1875. " Neues jahrb. f. mineral., 1875: 6.
1875. " Neue aufschl. dyas Weissig, 6.

See also Etoblattina weissigensis, Blattina (Etoblattina) weissigensis.

230. **Blattina (Etoblattina) weissigensis.** (Palæoblattariæ.)

Locality: Weissig, Germany. Horizon: Lower Dyas.

1880. Geinitz. Blatt. unter. dyas Weissig, 21. *Pl.* 39, *fig.* 11.
1880. " Verhandl. leop.-carol. akad. naturf., xli: 441. *Pl.* 39, *fig.* 11.

See also Etoblattina weissigensis, Blattina weissigensis.

231. **Blattina wemmetsweileriensis.** (Palæoblattariæ.)

Locality: Wemmetsweiler, Germany. Horizon: Carboniferous.

1877. Goldenberg. Fauna saræp. foss., ii: 19, 24, 51. *Pl.* 1, *fig.* 9.

See also Hermatoblattina wemmetsweileriensis, etc.

232. **Blattina (Hermatoblattina) wemmetsweileriensis.** (Palæoblattariæ.)

Locality: Wemmetsweiler, Germany. Horizon: Carboniferous.

1883. Kliver. Neue blatt. Saarbrücken. *Pl.* 1, *figs.* 4, 4*a*.
1883. " Palaeontogr., xxix. *Pl.* 34, *figs.* 4, 4*a*.

See also Hermatoblattina wemmetsweiliensis, etc.

233. **Blattina winteriana.** (Palæoblattariæ.)

Locality: Dudweiler, Germany. Horizon: Carboniferous.

1870. Goldenberg. Neues jahrb. f. mineral., 1870: 288–289. *Figs.* 1–4.
1877. " Fauna saræp. foss., ii: 19, 25–26, 51. *Pl.* 1, *fig.* 11.

See also Anthracoblattina winteriana.

234. **Breyeria borinensis.** (Protophasmida.)

Compared with Attacus aurora.

Locality: Mons, Belgium. Horizon: Carboniferous.

1875.	Borre.	Compt. rend. soc. ent. Belg., (2), No. 13: 7–11.
1875.	"	Ann. soc. ent. Belg., xviii: 6–10. *Pl.* 5, *fig.* 2; *Pl.* 6, *fig.* 2.
1875.	"	Empreint. insect. foss. Mons, 6–10. *Pl.* 5, *fig.* 2; *Pl.* 6, *fig.* 2.
1875.	"	Gerv., Journ. de zool., iv: 291–297.
1875.	Giard.	Bull. scient. dép. Nord, vii: 121–127.
1876.	Scudder.	Compt. rend. soc. ent. Belg., (2), No. 21: 2 (not a lepidopteron.)
1876.	Borre.	Compt. rend. soc. ent. Belg., (2), No. 22: 5–6.
1876.	Hagen.	Compt. rend. soc. ent. Belg., (2), No. 22: 6 (a Dictyoneura?).
1876.	Heer.	Compt. rend. soc. ent. Belg., (2), No. 22: 6 (a Libellula?).
1876.	Bar.	Compt. rend. soc. ent. Belg., (2), No. 28: 6 (homopterous).
1877.	McLachlan.	Compt. rend. soc. ent. Belg., (2), No. 41: 5–6 (an ephemerid).
1879.	Wallace.	Nature, xix: 501, 582 (lepidopteron).
1879.	McLachlan.	Nature, xx: 5–6 (neuropteron).
1879.	Eaton.	Nature, xx: 315 (ephemerid).
1879.	Borre.	Compt. rend. soc. ent. Belg., (2), No. 65: 7–12.
1879.	"	Note sur Breyeria, 1–6.
1885.	Scudder.	Proc. Amer. acad. arts sc., xx: 171.
1885.	Brongniart.	Bull. soc. amis sc. Rouen, (3), xxi: 64.
1885.	"	Rev. scient., (3), xxxvi: 278.
1885.	"	Geol. mag., (3), ii: 489.
1885.	"	Trans. geol. soc. Manch., xviii: 284.
1885.	"	Foss. ins. prim. rocks, 16.
1885.	"	Jahrb. geol. reichsanst., xxxv: 659.
1885.	Scudder.	Zittel, Handb. palaeont., i, ii: 757. *Fig.* 940.
1886.	"	Zittel-Barrois, Traité de paléont., ii: 757. *Fig.* 956.
1886.	"	Bull. U. S. geol. surv., No. 31: 40.

See also Pachytylopsis borinensis.

235. **Breyeria elongata.** (Protophasmida.)

Locality: Dudweiler, Germany. Horizon: Carboniferous.

1885.	Scudder.	Proc. Amer. acad. arts sc., xx: 171.

See also Dictyoneura elongata, Goldenbergia elongata.

236. **Caloneura dawsonii.**

Locality: Commentry. Horizon: Carboniferous.

1885.	Brongniart.	Ins. foss. terr. prim., 59. *Pl.* [4], *fig.* 2.
1885.	"	Bull. soc. amis sc. Rouen, (3), xxi: 59.
1885.	"	Rev. scient., (3), xxxvi: 276.
1885.	"	Geol. mag., (3), ii: 487. *Pl.* 12, *fig.* 2.
1885.	"	Trans. geol. soc. Manch., xviii. *Pl.*, *fig.* 2.
1885.	"	Jahrb. geol. reichsanst., xxxv: 655.

Calotermes affinis. See Termes (Calotermes) affinis.

Calotermes decheni. See Termes (Calotermes) decheni.

237. **Calotermes heeri.** (Protophasmida.)

Locality: Altenwald, Germany. Horizon: Carboniferous.

1858.	Hagen.	Catal. Neuropt. Brit. mus., 11 (loc. err.).

See also Termes (Eutermopsis) heeri, etc.

Calotermes humboldtianus. See Termes (Calotermes) humboldtianus, Dictyoneura humboldtiana.

238. Dictyoneura ———. (Protophasmida.)

Locality : Saarbrück basin. Horizon : Carboniferous.

1883. Kliver. Neue blatt. Saarbr., 13. *Pl.* 2, *fig.* 6.
1883. " Palaeontogr., xxix : 261. *Pl.* 35, *fig.* 6.

Dictyoneura absoleta. See Dictyoneura obsoleta.

239. Dictyoneura affinis. (Protophasmida.)

Locality : Germany. Horizon : Carboniferous.

1885. Scudder. Proc. Amer. acad. arts sc., xx : 170.
See also Termes affinis, etc.

240. Dictyoneura anthracophila. (Protophasmida.)

Locality : Gersweiler, Germany. Horizon : Carboniferous.

1854. Goldenberg. Palaeontogr., iv : 35. *Pl.* 6, *fig.* 6.
1854. " Foss. ins. Saarbrücken, 19. *Pl.* 4, *fig.* 6.
1854–'56. Bronn. Lethæa geogn., 3te aufl. i, ii : 684. *Pl.* 9^3, *fig.* 15*b*.
1856. Giebel. Insect. d. vorwelt, 267.
1857. Hagen. Verhandl. naturh. ver. preuss. Rheinl. Westph., xiv : 44.
1867. Goldenberg. Vorweltl. fauna steink. Saarbr., 14. *Pl.* 2, *fig.* 19 (ined.).
1873. " Fauna saræp. foss., i : 14. *Pl.* 2, *fig.* 19.
1877. " Fauna saræp. foss., ii : 50.
See also Litoneura anthracophila, Goldenbergia anthracophila.

Dictyoneura borinensis. See Breyeria borinensis.

241. Dictyoneura decheni. (Protophasmida.)

Locality : Altenwald, Germany. Horizon : Carboniferous.

1877. Goldenberg. Fauna saræp. foss., ii : 50.
See also Termes (Eutermopsis) decheni, etc.

242. Dictyoneura elegans. (Protophasmida.)

Locality : Dudweiler, Germany. Horizon : Carboniferous.

1877. Goldenberg. Fauna saræp. foss., ii : 9–10, 50. *Pl.* 1, *fig.* 1.
1885. Brauer. Sitzungsb. akad. wiss. Wien, xci : 281.
See also Polioptenus elegans, Goldenbergia elegans.

243. Dictyoneura elongata. (Protophasmida.)

Locality : Dudweiler, Germany. Horizon : Carboniferous.

1877. Goldenberg. Fauna saræp. foss., ii : 10–11, 50. *Pl.* 1, *fig.* 2.
1885. Brauer. Sitzungsb. akad. wiss. Wien, xci : 281.
See also Breyeria elongata, Goldenbergia elongata.

244. Dictyoneura formosa. (Protophasmida.)

Locality : Gersweiler, Germany. Horizon : Carboniferous.

1877. Goldenberg. Fauna saræp. foss., ii : 50.
See also Termes (Eutermopsis) formosus, etc.

245. Dictyoneura goldenbergi. (Protophasmida.)

Locality: Commentry, France. Horizon: Carboniferous.

1883. Brongniart. Naturaliste, v: 268.
1883. " Aperçu ins. foss., 7.
1884. " Compt. rend. acad. sc., xcviii: 832–833.
1884. " Bull. seances soc. ént. Fr., 1884: 225.
1885. " Bull. soc. amis sc. Rouen, (3) xxi: 62 (on pl. **wrongly as monyi,** see Errata). *Pl.* 2, *fig.* 3.
1885. " Rev. scient., (3), xxxvi: 277.
1885. " Geol. mag., (3), ii: 488.
1885. " Trans. geol. soc. Manch., xviii: 282.
1885. " Foss. ins. prim. rocks, 13.
1885. " Jahrb. geol. reichsanst., xxxv: 657.
1885. Scudder. Proc. Amer. acad. arts sc., xx: 173.

246. Dictyoneura gracilis. (Protophasmida.)

Locality: Friedrichsthal, Saarbrück, Germany. Horizon: Carboniferous.

1886. Kliver. Palaeontogr., xxxii: 107-108. *Pl.* 14, *figs.* 7, 8.

247. Dictyoneura haplophlebia. (Protophasmida.)

Locality: Cape Breton. Horizon: Carboniferous.

1877. Goldenberg. Fauna saræp. foss., ii: 16.
See also Haplophlebium barnesii.

Dictyoneura humboldtana. See Dictyoneura humboldtiana.

248. Dictyoneura humboldtiana. (Protophasmida.)

Locality: Sulzbach, Germany. Horizon: Carboniferous.

1854. Goldenberg. Palaeontogr., iv: 35–36. *Pl.* 6, *fig.* 5.
1854. " Foss. ins. Saarbrücken, 19–20. *Pl.* 4, *fig.* 5.
1856. Giebel. Insect. d. vorwelt, 267 (humboldtana).
1857. Hagen. Verhandl. naturh. ver. preuss. Rheinl. Westph., xiv: 44.
1860. " Linn. entom., xii: 296 (a Calotermes).
1876. Roemer. Lethæa geogn. *Pl.* 47, *fig.* 17.
1877. Goldenberg. Fauna saræp. foss., ii: 50.
1885. Scudder. Proc. Amer. acad. arts sc., xx: 170.
See also Termes (Calotermes) humboldtiana, Goldenbergia humboldtiana.

249. Dictyoneura ingens. (Protophasmida.)

Locality: England. Horizon: Carboniferous.

1884. Brongniart. Bull. séances soc. ent. Fr., 1884: 226.
See also Archæoptilus ingens.

250. Dictyoneura jucunda. (Protophasmida.)

Locality: Pennsylvania. Horizon: Carboniferous.

1885. Brongniart. Bull. soc. amis sc. Rouen, (3), xxi: 62.
1885. " Geol. mag., (3), ii: 488.
1885. " Trans. geol. soc. Manch., xviii: 282.
1885. " Foss. ins. prim. rocks, 13.
1885. " Jahrb. geol. reichsanst., xxxv: 657.
See also Titanophasma jucunda.

251. **Dictyoneura libelluloides.** (Protophasmida.)

Localities: Gersweiler, Auerswald bei Saarbrück, Germany. Horizon: Carboniferous.

1854.	Goldenberg.	Palaeontogr., iv: 33–35. *Pl.* 3, *fig.* 5.
1854.	“	Foss. ins. Saarbrücken, 17–19. *Pl.* 1, *fig.* 5.
1856.	Giebel.	Insect. d. vorwelt, 266–267.
1867.	Goldenberg.	Vorweltl. fauna steink. Saarbr., 13–14. *Pl.* 2, *fig.* 12 (ined.).
1873.	“	Fauna saræp. foss., i: 13–14. *Pl.* 2, *fig.* 12.
1876.	Gerstaecker.	Klass. ordn. arthr., Crust., i: 289, 292 (an ephemerid).
1877.	Goldenberg.	Fauna saræp. foss., ii: 50.
1885.	Brongniart.	Bull. soc. amis sc. Rouen, (3), xxi: 62.
1885.	“	Geol. mag., (3), ii: 488.
1885.	“	Trans. geol. soc. Manch., xviii: 282.
1885.	“	Foss. ins. prim. rocks, 13.
1885.	“	Jahrb. geol. reichsanst., xxxv: 657.

See also Titanophasma libelluloides.

252. **Dictyoneura monyi.** (Protophasmida.)

Locality: Commentry, France. Horizon: Carboniferous.

1884.	Brongniart.	Compt. rend. acad. sc., xcviii: 833.
1884.	“	Bull. séances soc. ent. Fr., 1884: 225.
1885.	Scudder.	Proc. Amer. acad. arts sc., xx: 173.

See also D. goldenbergi, Meganeura monyi, Meganeura (Dictyoneura) monyi.

253. **Dictyoneura nigra.** (Protophasmida.)

Locality: Frankenhöltz, Bavaria. Horizon: Carboniferous.

1883.	Kliver.	Neue blatt. Saarbrücken, 12–13. *Pl.* 2, *fig.* 5.
1883.	“	Palaeontogr., xxix: 260–261. *Pl.* 35, *fig.* 5.

See also Goldenbergia nigra.

254. **Dictyoneura obsoleta.** (Protophasmida.)

Locality: Altenwald, Germany. Horizon: Carboniferous.

1877.	Goldenberg.	Fauna saræp. foss., ii: 11, 50 (absoleta in plate). *Pl.* 1, *fig.* 4.

See also Litoneura obsoleta, Goldenbergia obsoleta.

255. **Dictyoneura schmitzii.** (Protophasmida.)

Locality: Altenwald, Germany. Horizon: Carboniferous.

1877.	Goldenberg.	Fauna saræp. foss., ii: 11, 50. *Pl.* 1, *fig.* 3.
1885.	Scudder.	Proc. Amer. acad. arts sc., xx: 170.

See also Goldenbergia schmitzii.

256. **Dictyoneura sinuosa.** (Protophasmida.)

Locality: Saarbrück basin, Germany. Horizon: Carboniferous.

1883.	Kliver.	Neue blatt. Saarbrücken, 11–12. *Pl.* 2, *fig.* 4.
1883.	“	Palaeontogr., xxix: 259–260. *Pl.* 35, *fig.* 4.
1885.	Scudder.	Proc. Amer. acad. arts sc., xx: 170.

See also Goldenbergia sinuosa.

257. **Dictyopteris didyma.** (Palæoblattariæ.)

Locality: Germany. Horizon: Carboniferous.

1839.	Rost.	De filicum ectypis, 21.

See also Blattina didyma, etc.

258. Etoblattina affinis. (Palæoblattariæ.)

Locality: Löbejün, Saxony. Horizon: Upper Carboniferous.

1879. Scudder. Mem. Bost. soc. nat. hist., iii: 62. *Pl.* 2, *fig.* 2.
1890. " Foss. ins. N. A., i: 82. *Pl.* 2, *fig.* 2.
See also Blattina affinis.

259. Etoblattina anaglyptica. (Palæoblattariæ.)

Locality: Wettin, Saxony. Horizon: Upper Carboniferous.

1879. Scudder. Mem. Bost. soc. nat. hist., iii: 69–70. *Pl.* 2, *fig.* 15.
1890. " Foss. ins. N. A., i: 89–90. *Pl.* 2, *fig.* 15.
See also Blattina anaglyptica, etc.

260. Etoblattina anthracophila. (Palæoblattariæ.)

Locality: Wettin, Saxony. Horizon: Upper Carboniferous.

1879. Scudder. Mem. Bost. soc. nat. hist., iii: 64–65. *Pl.* 2, *fig.* 1.
1890. " Foss. ins. N. A., i: 84–85. *Pl.* 2, *fig.* 1.
See also Blattina anthracophila, Blattina anaglyptica, etc.

261. Etoblattina balteata. (Palæoblattariæ.)

Locality: West Virginia. Horizon: Permo-carboniferous.

1889. Scudder. Proc. Bost. soc. nat. hist., xxiv: 46, 48.
1889. Lesley. Dict. foss. Penns., i: p. xxii–xxiii.
See also Gerablattina balteata.

Etoblattina bituminosa. See Blattina (Etoblattina) bituminosa.

262. Etoblattina carbonaria. (Palæoblattariæ.)

Localities: Wettin, Weissig?, Germany. Horizon: Upper Carboniferous, Dyas?

1879. Scudder. Mem. Bost. soc. nat. hist., iii: 73–74. *Pl.* 2, *fig.* 3.
1887. Deichmüller. Ber. senckenb. gesellsch. Frankf., 1886–'87: 93–94. *Pl.* 3, *fig.* 3.
1890. Scudder. Foss. ins. N. A., i: 93–94. *Pl.* 2, *fig.* 3.
See also Blattina carbonaria, B. (Etoblattina) carbonaria var. deichmülleri, Etoblattina carbonaria var.

263. Etoblattina carbonaria var. (Palæoblattariæ.)

Locality: Weissig, Germany. Horizon: Dyas.

1882. Deichmüller. Sitzungsb. gesellsch. Isis, 1882: 38–40. *Pl.* 1, *figs.* 2–3.
See also Etoblattina carbonaria, etc.

264. Etoblattina didyma. (Palæoblattariæ.)

Localities: Wettin, Ilmenau, Germany. Horizon: Upper Carboniferous.

1879. Scudder. Mem. Bost. soc. nat. hist., iii: 75–76. *Pl.* 2, *fig.* 13.
1890. " Foss. ins. N. A., i: 95–96. *Pl.* 2, *fig.* 13.
See also Blattina didyma, etc.

265. Etoblattina dohrnii. (Palæoblattariæ.)

Locality: Wettin, Saxony. Horizon: Upper Carboniferous.

1879. Scudder. Mem. Bost. soc. nat. hist., iii: 66–67. *Pl.* 2, *fig.* 5.
1890. " Foss. ins. N. A., i: 86–87. *Pl.* 2, *fig.* 5.
See also Blattina euglyptica, etc.

266. Etoblattina elongata. (Palæoblattariæ.)

Locality: Weissig, Germany. Horizon: Lower Dyas.

1879. Scudder. Mem. Bost. soc. nat. hist., iii: 80–81. *Pl.* 2, *fig.* 10.
1890. " Foss. ins. N. A., i: 100–101. *Pl.* 2, *fig.* 10.

See also Blattina cf. mahri, B. (Etoblattina) elongata.

267. Etoblattina euglyptica. (Palæoblattariæ.)

Locality: Wettin, Saxony. Horizon: Upper Carboniferous.

1879. Scudder. Mem. Bost. soc. nat. hist., iii: 60–61. *Pl.* 2, *fig.* 16; *Pl.* 4, *fig.* 7.
1890. " Foss. ins. N. A., i: 80–81. *Pl.* 2, *fig.* 16; *Pl.* 4, *fig.* 7.

See also Blattina euglyptica, etc.

268. Etoblattina fasciata. (Palæoblattariæ.)

Localities: Richmond, Ohio; Cassville, W. Va. Horizon: Upper Carboniferous.

1889. Scudder. Proc. Bost. soc. nat. hist., xxiv: 47–48.
1889. Lesley. Dict. foss. Penns., i: p. xxiii.

269. Etoblattina flabellata. (Palæoblattariæ.)

Localities: Wettin, Weissig, Germany. Horizon: Upper Carboniferous, Dyas.

1879. Scudder. Mem. Bost. soc. nat. hist., iii: 62–64. *Pl.* 2, *fig.* 4.
1890. " Foss. ins. N. A., i: 82–84. *Pl.* 2, *fig.* 4.

See also Blattina flabellata, etc.

270. Etoblattina flabellata var. stelzneri. (Palæoblattariæ.)

Locality: Weissig, Germany. Horizon: Dyas.

1882. Deichmuller. Sitzungsb. gesellsch. Isis, 1882: 34–38. *Pl.* 1, *fig.* 1, 1 *a–d.*

See also Blattina flabellata, etc., Etoblattina flabellata.

271. Etoblattina hustoni. (Palæoblattariæ.)

Locality: Richmond, Ohio. Horizon: Barren Coal Measures.

1889. Scudder. Proc. Bost. soc. nat. hist., xxiv: 53.
1889. Lesley. Dict. foss. Penns., i: p. xxiii.

272. Etoblattina insignis. (Palæoblattariæ.)

Locality: Saarbrück, Germany. Horizon: Middle Carboniferous.

1879. Scudder. Mem. Bost. soc. nat. hist., iii: 82–83. *Pl.* 2, *fig.* 7; *Pl.* 4, *fig.* 9.
1890. " Foss. ins. N. A., i: 102–103. *Pl.* 2, *fig.* 7; *Pl.* 4, *fig.* 9.

See also Blattina insignis, Leptoblattina insignis.

273. Etoblattina intermedia. (Palæoblattariæ.)

Locality: Wemmetsweiler, Germany. Horizon: Middle Carboniferous.

1883. Kliver. Neue blatt. Saarbrück., 9–10. *Pl.* 2, *fig.* 2, 2*a.*
1883. " Palaeontogr., xxix: 257–258. *Pl.* 35, *fig.* 2, 2*a.*

See also Gerablattina intermedia, etc.

274. Etoblattina johnsoni. (Palæoblattariæ.)

Locality: Coseley, vic. Dudley, England. Horizon: Carboniferous.

1887. Woodward. Geol. mag., (3), iv: 53–55. *Pl.* 2, *fig.* 1*a–b.*

275. Etoblattina labachensis. (Palæoblattariæ.)

Locality: Labach, Germany. **Horizon**: Upper Carboniferous.

1879.	Scudder.	Mem. Bost. soc. nat. hist., iii: 59–60. *Pl.* 3, *fig.* 5.
1890.	"	Foss. ins. N. A., i: 79–80. *Pl.* 3, *fig.* 5.

See also Blattina labachensis, B. anaglyptica var. labachensis, Blattina anaglyptica, etc.

276. Etoblattina lanceolata. (Palæoblattariæ.)

Locality: Lugau, Saxony. **Horizon**: Carboniferous.

1881.	Sterzel.	Ber. naturw. gesellsch. Chemn., vii: 273.

See also Blattina (Etoblattina) lanceolata.

277. Etoblattina leptophlebica. (Palæoblattariæ.)

Locality: Löbejün, Saxony. **Horizon**: Upper Carboniferous.

1879.	Scudder.	Mem. Bost. soc. nat. hist., iii: 77–79. *Pl.* 3, *fig.* 9.
1890.	"	Foss. ins. N. A., i: 97–99. *Pl.* 3, *fig.* 9.

See also Blattina leptophlebica.

278. Etoblattina lesquereuxii. (Palæoblattariæ.)

Locality: Vic. Pittston, Pa. **Horizon**: Middle Carboniferous.

1879.	Scudder.	Mem. Bost. soc. nat. hist., iii: 67–69. *Pl.* 6, *figs.* 3, 4; *fig.* on *p.* 68.
1883.	Lacoe.	List pal. foss. ins., 6.
1889.	Lesley.	Dict. foss. Penns., i: p. xxiii.
1889.	Miller.	N. A. geol. and pal., 576.
1890.	Scudder.	Foss. ins. N. A., i: 87–89. *Pl.* 6, *figs.* 3, 4; *fig.* on *p.* 88.

279. Etoblattina manebachensis. (Palæoblattariæ.)

Locality: Manebach, Germany. **Horizon**: Upper Carboniferous.

1879.	Scudder.	Mem. Bost. soc. nat. hist., iii: 79–80. *Pl.* 2, *fig.* 14.
1885.	"	Zittel, Handb. palaeont., i, th. ii: 754. *Fig.* 932.
1886.	"	Zittel-Barrois, Traité de paléont., ii: 754. *Fig.* 949.
1886.	Brauer.	Ann. naturh. hofmus., i: 115–116. *Pl.* 7, *fig.* 8.
1890.	Scudder.	Foss. ins. N. A., i: 99–100. *Pl.* 2, *fig.* 14.

See also Blattina manebachensis, B. (Etoblattina) manebachensis.

280. Etoblattina mantidioides. (Palæoblattariæ.)

Locality: Claxheugh, Durham, England. **Horizon**: Upper Carboniferous.

1879.	Scudder.	Mem. Bost. soc. nat. hist., iii: 72–73. *Pl.* 3, *fig.* 8; *fig.* on *p.* 73.
1881.	Scudder.	Geol. mag., (2), viii: 300.
1883.	"	Mem. Bost. soc. nat. hist., iii: 223.
1890.	"	Foss. ins. N. A., i: 92–93, 245. *Pl.* 3, *fig.* 8; *fig.* on *p.* 93.

See also Blattidium mantidioides, etc.

281. Etoblattina marginata. (Palæoblattariæ.)

Locality: Richmond, Ohio. **Horizon**: Barren Coal Measures.

1889.	Scudder.	Proc. Bost. soc. nat. hist., xxiv: 48–50.
1889.	Lesley.	Dict. foss. Penns., i: p. xxiii.

282. Etoblattina mazona. (Palæoblattariæ.)

Locality: Mazon Creek, Ill. **Horizon**: Carboniferous.

1882.	Scudder.	Mem. Bost. soc. nat. hist., iii: 181. *Pl.* 10.
1882.	"	Proc. Bost. soc. nat. hist., xxi: 391–396.

1883. **Lacoe.** List pal. foss. ins., 6.
1886. **Scudder.** Miall, Cockroach, 211. *Fig.* 120.
1887. **Woodward.** Geol. mag., (3), iv: 53. *Fig.* 4.
1889. **Lesley.** Dict. foss. Penns., i: p. xxiii.
1889. **Miller.** N. A. geol. and pal., 577 (mazonana).
1890. **Scudder.** Foss. ins. N. A., i: 233. *Pl.* 7*a*.

Etoblattina mazonana. See Etoblattina mazona.

283. Etoblattina occidentalis. (Palæoblattariæ.)

Locality: Lawrence, Kans. **Horizon:** Carboniferous.

1890. **Scudder.** Mem. Bost. soc. nat. hist., iv: 410–411. *Pl.* 32, *fig.* 4.
1890. " Foss. ins. N. A., i: 386–387. *Pl.* 24, *fig.* 4.

284. Etoblattina ornatissima. (Palæoblattariæ.)

Locality: Grügelborn, Germany. **Horizon:** Carboniferous.

1887. **Deichmüller.** Ber. senckenb. gesellsch. Frankf., 1886–'87: 90–92. *Pl.* 3, *fig.* 1.

285. Etoblattina parvula. (Palæoblattariæ.)

Locality: Löbejün, Saxony. **Horizon:** Upper Carboniferous.

1879. **Scudder.** Mem. Bost. soc. nat. hist., iii: 81. *Pl.* 2, *fig.* 9.
1890. " Foss. ins. N. A., i: 101. *Pl.* 2, *fig.* 9.
See also Blattina parvula.

286. Etoblattina peachii. (Palæoblattariæ.)

Locality: Kilmaurs, Scotland. **Horizon:** Carboniferous.

1887. **Woodward.** Geol. mag., (3), iv: 433–435. *Pl.* 12, *fig.* 1.

287. Etoblattina primæva. (Palæoblattariæ.)

Locality: Gersweiler, Germany. **Horizon:** Upper Carboniferous.

1879. **Scudder.** Mem. Bost. soc. nat. hist., iii: 58–59. *Pl.* 3, *fig.* 7.
1889. **Miller.** N. A. geol. and pal. *Fig.* 1080.
1890. **Scudder.** Foss. ins. N. A., i: 78–79. *Pl.* 3, *fig.* 7.
See also Blattina primæva.

288. Etoblattina propria. (Palæoblattariæ.)

Locality: Saarbrück basin, Germany. **Horizon:** Carboniferous.

1883. **Kliver.** Neue blatt. Saarbrück., 10–11. *Pl.* 2, *fig.* 3.
1883. " Palaeontogr., xxix: 258–259. *Pl.* 35, *fig.* 3.
See also Blattina propria.

289. Etoblattina rollei. (Palæoblattariæ.)

Locality: Grügelborn, Germany. **Horizon:** Carboniferous.

1887. **Deichmüller.** Ber. senckenb. gesellsch. Frankf., 1886–'87: 92–93. *Pl.* 3, *fig.* 2.

290. Etoblattina russoma. (Palæoblattariæ.)

Locality: Löbejün, Saxony. **Horizon:** Upper Carboniferous.

1879. **Scudder.** Mem. Bost. soc. nat. hist., iii: 76–77. *Pl.* 2, *fig.* 6.
1890. " Foss. ins. N. A., i: 96–97. *Pl.* 2, *fig.* 6.
See also Blattina russoma.

291. Etoblattina steinbachensis. (Palæoblattariæ.)

Locality: Steinbachthal, Germany. Horizon: Carboniferous.
1886. Kliver. Palaeontogr., xxxii: 100–104. *Pl.* 14. *figs.* 2, 3.

292. Etoblattina stipata. (Palæoblattariæ.)

Locality: Richmond, Ohio. Horizon: Barren Coal Measures.
1889. Scudder. Proc. Bost. soc. nat. hist., xxiv: 50–51.
1889. Lesley. Dict. foss. Penns., i: p. xxiii.

293. Etoblattina strigosa. (Palæoblattariæ.)

Locality: Richmond, Ohio. Horizon: Barren Coal Measures.
1889. Scudder. Proc. Bost. soc. nat. hist., xxiv: 52–53.
1889. Lesley. Dict. foss. Penns., i: p. xxiii.

294. Etoblattina tenuis. (Palæoblattariæ.)

Locality: Richmond, Ohio. Horizon: Barren Coal Measures.
1889. Scudder. Proc. Bost. soc. nat. hist., xxiv: 46–47.
1889. Lesley. Dict. foss. Penns., i: p. xxiii.

295. Etoblattina variegata. (Palæoblattariæ.)

Locality: Richmond, Ohio. Horizon: Barren Coal Measures.
1889. Scudder. Proc. Bost. soc. nat. hist., xxiv: 51–52.
1889. Lesley. Dict. foss. Penns., i: p. xxiii.

296. Etoblattina venusta. (Palæoblattariæ.)

Locality: Frog Bayou, Ark. Horizon: Lower Carboniferous.
1879. Scudder. Mem. Bost. soc. nat. hist., iii: 70–72. *Pl.* 6, *fig.* 12.
1883. Lacoe. List. pal. foss. ins., 7.
1889. Lesley. Dict. foss. Penns., i: p. xxiii.
1889. Miller. N. A. geol. and pal., 577. *Fig.* 1081.
1890. Scudder. Foss. ins. N. A., i: 90–92. *Pl.* 6, *fig.* 12.
See also Blattina venusta.

297. Etoblattina weissigensis. (Palæoblattariæ.)

Locality: Weissig, Germany. Horizon: Dyas.
1879. Scudder. Mem. Bost. soc. nat. hist., iii: 65–66. *Pl.* 6, *fig*, 5.
1890. " Foss. ins. N. A., i: 85–86. *Pl.* 6, *fig.* 5.
See also Blattina weissigensis, B. (Etoblattina) weissigensis.

Eurypterus granosus. See Adelophthalmus (Eurypterus) granosus

Eutermopsis affinis. See Termes (Eutermopsis) affinis.

Eutermopsis decheni. See Termes (Eutermopsis) decheni.

Eutermopsis formosus. See Termes (Eutermopsis) formosus.

Eutermopsis heeri. See Termes (Eutermopsis) heeri.

298. **Gerablattina balteata.** (Palæoblattariæ.)

Localities: Cassville, W. Va., Bellaire, Ohio. **Horizon:** Upper Carboniferous, Permo-Carboniferous.

1879. Scudder. Mem. Bost. soc. nat. hist., iii: 110–112. *Pl.* 6, *figs.* 9, 10.
1880. " Font.-White, Perm. flora W. Va. (Rep. 2d geol. surv. Penn., PP), 104. *Pl.* 38, *figs.* 5, 5*a*.
—— Font.-White. Upper carb. flora W. Va. (Blattina sp.). *Pl.* 22, *figs.* 16, 16*a*. (ined.).
1883. Lacoe. List. pal. foss. ins., 7, 8.
1889. Lesley. Dict. foss. Penns., i: 253. *Figs.*
1889. Miller. N. A. geol. and pal., 577. *Fig.* 1083.
1890. Scudder. Foss. ins. N. A., i: 130–132. *Pl.* 6, *figs.* 9, 10.

See also Etoblattina balteata.

299. **Gerablattina clathrata.** (Palaeoblattariæ.)

Locality: Manebach, Thüringen. **Horizon:** Upper Carboniferous.

1879. Scudder. Mem. Bost. soc. nat. hist., iii: 100–101. *Pl.* 3, *fig.* 4.
1890. " Foss. ins. N. A., i: 120–121. *Pl.* 3, *fig.* 4.

See also Blattina clathrata, B. latinervis.

300. **Gerablattina fascigera.** (Palæoblattariæ.)

Locality: Pittston, Pa. **Horizon:** Lower Carboniferous.

1879. Scudder. Mem. Bost. soc. nat. hist., iii: 113–115. *Pl.* 6, *figs.* 1, 2.
1883. Lacoe. List pal. foss. ins., 8.
1889. Lesley. Dict. foss. Penns., i: p. xxv, 254. 2 *figs.*
1889. Miller. N. A. geol. and pal., 577.
1890. Scudder. Foss. ins. N. A., i: 133–135. *Pl.* 6, *figs.* 1, 2.

See also Blattina fascigera.

301. **Gerablattina geinitzi.** (Palæoblattariæ.)

Locality: Löbejün, Saxony. **Horizon:** Upper Carboniferous.

1879. Scudder. Mem. Bost. soc. nat. hist., iii: 103–104. *Pl.* 2, *fig.* 11.
1890. " Foss. ins. N. A., i: 123–124. *Pl.* 2, *fig.* 11.

See also Blattina geinitzi.

302. **Gerablattina germari.** (Palæoblattariæ.)

Locality: Wettin, Saxony. **Horizon:** Upper Carboniferous.

1879. Scudder. Mem. Bost. soc. nat. hist., iii: 107–108. *Pl.* 3, *fig.* 6.
1890. " Foss. ins. N. A., i: 127–128. *Pl.* 3, *fig.* 6.

See also Blatta germari, etc.

303. **Gerablattina goldenbergi.** (Palæoblattariæ.)

Locality: Manebach, Thüringen. **Horizon:** Upper Carboniferous.

1879. Scudder. Mem. Bost. soc. nat. hist., iii: 98–99. *Pl.* 3, *fig.* 13.
1890. " Foss. ins. N. A., i: 118–119. *Pl.* 3, *fig.* 13.

See also Blattina goldenbergi.

304. **Gerablattina intermedia.** (Palæoblattariæ.)

Locality: Wemmetsweiler, Germany. **Horizon:** Middle Carboniferous.

1879. Scudder. Mem. Bost. soc. nat. hist., iii: 101–102. *Pl.* 3, *fig.* 11.
1883. Kliver. Neue blatt. Saarbrück., 9–10. *Pl.* 2, *figs.* 2, 2*a*.
1883. " Palaeontogr., xxix: 257–258. *Pl.* 35, *figs*, 2, 2*a*.
1890. Scudder. Foss. ins. N. A., i: 121–122. *Pl.* 3, *fig.* 11.

See also Blattina intermedia, B. (Gerablattina) intermedia, Etoblattina intermedia.

305. Gerablattina mahri. (Palæoblattariæ.)

Locality: Manebach, Thüringen. Horizon: Upper Carboniferous.

1879. Scudder. Mem. Bost. soc. nat. hist., iii: 108–109. *Pl.* 3, *fig.* 14.
1890. " Foss. ins. N. A., i: 128–129. *Pl.* 3, *fig.* 14.
See also Blattina mahri.

306. Gerablattina münsteri. (Palæoblattariæ.)

Locality: Wettin, Saxony. Horizon: Upper Carboniferous.

1879. Scudder. Mem. Bost. soc. nat. hist., iii: 104–106. *Pl.* 2, *fig.* 12.
1890. " Foss. ins. N. A., i: 124–126. *Pl.* 2, *fig.* 12.
See also Blattina flabellata, Etoblattina flabellata.

307. Gerablattina producta. (Palæoblattariæ.)

Locality: Wettin, Saxony. Horizon: Upper Carboniferous.

1879. Scudder. Mem. Bost. soc. nat. hist., iii: 106–107. *Pl.* 3, *fig.* 2.
1890. " Foss. ins. N. A., i: 126–127. *Pl.* 3, *fig.* 2.
See also Blattina euglyptica, etc.

308. Gerablattina robusta. (Palæoblattariæ.)

Locality: Wemmetsweiler, Germany. Horizon: Carboniferous.

1883. Kliver. Neue blatt. Saarbrück., 7. *Pl.* 1, *figs.* 3, 3*a*.
1883. " Palaeontogr., xxix: 255. *Pl.* 34, *figs.* 3, 3*a*.

309. Gerablattina scaberata. (Palæoblattariæ.)

Locality: Altenwald, Germany. Horizon: Middle Carboniferous.

1879. Scudder. Mem. Bost. soc. nat. hist., iii: 102–103. *Pl.* 3, *fig.* 3.
1890. " Foss. ins. N. A., i: 122–123. *Pl.* 3, *fig.* 3.
See also Blattina scaberata.

310. Gerablattina weissiana. (Palæoblattariæ.)

Locality: Brücken, Rheinpfalz. Horizon: Upper Carboniferous.

1879. Scudder. Mem. Bost. soc. nat. hist., iii: 109–110. *Pl.* 3, *fig.* 1.
1890. " Foss. ins. N. A., i: 129–130. *Pl.* 3, *fig.* 1.
See also Blattina euglyptica var. weissiana, etc.

311. Gerephemera simplex.

Locality: St. John, New Brunswick. Horizon: Devonian.

1865. Scudder. Devon. ins. N. Brunsw., 1 (unnamed).
1865. " Bailey, Obs. geol. south. N. Brunsw., 140 (unnamed).
1865. " Amer. journ. sc., (2), xxxix: 357 (unnamed).
1865. " Can. nat., n. s., ii: 235 (unnamed).
1865. " Trans. ent. soc. Lond., (3), ii: 117 (unnamed).
1868. " Geol. mag., v: 174, 175.
1880. " Dev. ins. N. Brunsw. (Anniv. mem. Bost. soc. nat. hist.), 12–16. *Pl.* 1, *figs.* 8, 8*a*.
1881. Hagen. Bull. mus. comp. zool., viii: 277–278.
1883. Lacoe. List pal. foss. ins., 8.
1885. Scudder. Early winged ins. Amer., 2–3. *Pl.*, *figs.* 8, 9.
1885. Brongniart. Bull. soc. amis sc. Rouen, (3), xxi: 56.
1885. Hagen. Nature, xxxii: 54.
1885. " Zool. anz., viii: 298–300.
1885. Brongniart. Geol. mag., (3), ii: 484.

1885.	Brongniart.	Trans. geol. soc. Manch., xviii: 275.
1885.	"	Foss. ins. prim. rocks, 7.
1885.	"	Jahrb. geol. reichsanst., xxxv: 653.
1886.	Brauer.	Ann. naturh. hofmus., i: 111.
1889.	Miller.	N. A. geol. and pal., 577.
1890.	Scudder.	Foss. ins. N. A., i: 164–168, 276–277. *Pl.* 7, *figs.* 8, 8*a*; *Pl.* 14, *figs.* 8, 9.

312. **Goldenbergia affinis.** (Protophasmida.)

Locality: Germany. Horizon: Carboniferous.

1885.	Brongniart.	Bull. soc. amis sc. Rouen, (3), xxi: 61.
1885.	"	Geol. mag., (3), ii: 488.
1885.	"	Trans. geol. soc. Manch., xviii: 281.
1885.	"	Foss. ins. prim. rocks, 13.
1885.	"	Jahrb. geol. reichsanst., xxxv: 657.

See also Termes affinis, etc.

313. **Goldenbergia amissa.**

Locality: Altenwald, Germany. Horizon: Carboniferous.

1885.	Brongniart.	Bull. soc. amis sc. Rouen, (3), xxi: 61.
1885.	"	Geol. mag., (3), ii: 488.
1885.	"	Trans. geol. soc. Manch., xviii: 281.
1885.	"	Foss. ins. prim. rocks, 13.
1885.	"	Jahrb. geol. reichsanst., xxxv: 657.

See also Termitidium amissum.

314. **Goldenbergia anthracophila.** (Protophasmida.)

Locality: Gersweiler, Germany. Horizon: Carboniferous.

1885.	Brongniart.	Bull. soc. amis sc. Rouen, (3), xxi: 61.
1885.	"	Geol. mag., (3), ii: 488.
1885.	"	Trans. geol. soc. Manch., xviii: 281.
1885.	"	Foss. ins. prim. rocks, 13.
1885.	"	Jahrb. geol. reichsanst., xxxv: 657.

See also Dictyoneura anthracophila, Litoneura anthracophila.

Goldenbergia contusa. See I, NEUROPT., Idem.

315. **Goldenbergia decheni.** (Protophasmida.)

Locality: Altenwald, Germany. Horizon: Carboniferous.

1885.	Scudder.	Proc. Amer. acad. arts sc., xx: 171.
1885.	Brongniart.	Bull. soc. amis sc. Rouen, (3), xxi: 61.
1885.	"	Geol. mag., (3), ii: 488.
1885.	"	Trans. geol. soc. Manch., xviii: 281.
1885.	"	Foss. ins. prim. rocks, 13.
885.	"	Jahrb. geol. reichsanst., xxxv: 657.

See also Termes (Eutermopsis) decheni, etc.

316. **Goldenbergia elegans.** (Protophasmida.)

Locality: Dudweiler, Germany. Horizon: Carboniferous.

1885.	Brongniart.	Bull. soc. amis sc. Rouen, (3), xxi: 61.
1885.	"	Geol. mag., (3), ii: 488.
1885.	"	Trans. geol. soc. Manch., xviii: 281.
1885.	"	Foss. ins. prim. rocks, 13.
1885.	"	Jahrb. geol. reichsanst., xxxv: 657.

See also Dictyoneura elegans, Polioptenus elegans.

317. Goldenbergia elongata, Germany. (Protophasmida.)

Locality: Dudweiler, Germany. Horizon: Carboniferous.

1885.	Scudder.	Proc. Amer. acad. arts sc., xx: 171.
1885.	"	Mem. Bost. soc. nat. hist., iii: 322, note.
1885.	Brongniart.	Bull. soc. amis sc. Rouen, (3), xxi: 61.
1885.	"	Geol. mag., (3), ii: 488.
1885.	"	Trans. geol. soc. Manch., xviii: 281.
1885.	"	Foss. ins. prim. rocks, 13.
1885.	"	Jahrb. geol. reichsanst., xxxv: 657.
1890.	Scudder.	Foss. ins. N. A., i: 286 note 3.

See also Dictyoneura elongata, Breyeria elongata.

318. Goldenbergia formosa. (Protophasmida.)

Locality: Gersweiler, Germany. Horizon: Carboniferous.

1885.	Scudder.	Proc. Amer. acad. arts sc., xx: 172.

See also Termes (Eutermopsis) formosus, etc.

319. Goldenbergia heeri. (Protophasmida.)

Locality: Altenwald, Germany. Horizon: Carboniferous.

1855.	Scudder.	Proc. Amer. acad. arts sc., xx: 172.
1885.	Brongniart.	Bull. soc. amis sc. Rouen, (3), xxi: 61.
1885.	"	Geol. mag., (3), ii: 488.
1885.	"	Trans. geol. soc. Manch., xviii: 281.
1885.	"	Foss. ins. prim. rocks, 13.
1885.	"	Jahrb. geol. reichsanst., xxxv: 657.

See also Termes (Eutermopsis) heeri, etc.

320. Goldenbergia humboldtiana. (Protophasmida.)

Locality: Sulzbach, Germany. Horizon: Carboniferous.

1885.	Brongniart.	Bull. soc. amis sc. Rouen, (3), xxi: 61.
1885.	"	Geol. mag., (3), ii: 488.
1885.	"	Trans. geol. soc. Manch., xviii: 281.
1885.	"	Foss. ins. prim. rocks, 13.
1885.	"	Jahrb. geol. reichsanst., xxxv: 657.

See also Dictyoneura humboldtiana, etc.

321. Goldenbergia laxa. (Protophasmida.)

Locality: Dudweiler, Germany. Horizon: Carboniferous.

1885.	Brongniart.	Bull. soc. amis sc. Rouen, (3), xxi: 61.
1885.	"	Geol. mag., (3), ii: 488.
1885.	"	Trans. geol. soc. Manch., xviii: 281.
1885.	"	Foss. ins. prim. rocks, 13.
1885.	"	Jahrb. geol. reichsanst., xxxv: 657.

See also Termes laxus, etc.

322. Goldenbergia longitudinalis.

Locality: Mazon Creek, Ill. Horizon: Carboniferous.

1885.	Brongniart.	Bull. soc. amis sc. Rouen, (3), xxi: 61.
1885.	"	Geol. mag., (3), ii: 488.
1885.	"	Trans. geol. soc. Manch., xviii: 281.
1885.	"	Foss. ins. prim. rocks, 13.
1885.	"	Jahrb. geol. reichsanst., xxxv: 657.

See also Termes longitudinalis.

323. **Goldenbergia nigra.** (Protophasmida.)

Locality: Bavaria. Horizon: Carboniferous.

1885.	Scudder.	Proc. Amer. acad. arts sc., xx: 171.

See also Dictyoneura nigra.

324. **Goldenbergia obsoleta.** (Protophasmida.)

Locality: Altenwald, Germany. Horizon: Carboniferous.

1885.	Brongniart.	Bull. soc. amis sc. Rouen, (3), xxi: 62.
1885.	"	Geol. mag., (3), ii: 488.
1885.	"	Trans. geol. soc. Manch., xviii: 281.
1885.	"	Foss. ins. prim. rocks, 13.
1885.	"	Jahrb. geol. reichsanst., xxxv: 657.

See also Dictyoneura obsoleta, etc.

325. **Goldenbergia schmitzii.** (Protophasmida.)

Locality: Altenwald, Germany. Horizon: Carboniferous.

1885.	Brongniart.	Bull. soc. amis. sc. Rouen, (3), xxi: 62 (smitzii).
1885.	"	Geol. mag., (3), ii: 488.
1885.	"	Trans. geol. soc. Manch., xviii: 281.
1885.	"	Foss. ins. prim. rocks, 13.
1885.	"	Jahrb. geol. reichsanst., xxxv: 657.

See also Dictyoneura schmitzii.

326. **Goldenbergia sinuosa.** (Protophasmida.)

Locality: Saarbrück, Germany. Horizon: Carboniferous.

1885.	Brongniart.	Bull. soc. amis sc. Rouen, (3), xxi: 62.
1885.	"	Geol. mag., (3), ii: 488.
1885.	"	Trans. geol. soc. Manch., xviii: 281.
1885.	"	Foss. ins. prim. rocks, 13.
1885.	"	Jahrb. geol. reichsanst., xxxv: 657.

See also Dictyoneura sinuosa.

Goldenbergia smitzii. See Goldenbergia schmitzii.

Gryllacris (Corydalis) brongniarti. See I, NEUROPT., Idem.

327. **Haplophlebium barnesii.** (Protophasmida.)

Locality: Cape Breton. Horizon: Carboniferous.

1867.	Scudder.	Proc. Bost. soc. nat. hist., xi: 151.
1867.	"	Geol. mag., iv: 386. *Pl.* 17, *fig.* 1*a*.
1868.	"	Can. nat., (2), iii: 202-206.
1868.	"	Dawson, Acad. geol., 2d ed., 386-388. *Figs.* 152, 152*a*.
1868.	"	Amer. nat., i: 631. *Pl.* 16, *figs.* 8, 8*a*.
1868.	"	Geol. mag., v: 177.
1872.	Packard.	Guide ins., 3d ed., 78. *Pl.* 1, *figs.* 8, 8*a*.
1877.	Goldenberg.	Fauna saræp. foss., ii: 50.
1877.	Nicholson.	Life hist. earth, 182. *Fig.* 125.
1879.	"	Manual palæont., 2d ed., i: 406. *Fig.* 257.
1880.	Dawson.	Dawn of life, 147. *Fig.* 128.
1883.	Lacoe.	List pal. foss. ins., 8.
1885.	Scudder.	Proc. Amer. acad. arts sc., xx: 172.
1885.	Brongniart.	Bull. soc. amis sc. Rouen, (3), xxi: 61.
1885.	"	Geol. mag., (3), ii: 488.

1885. Brongniart. Trans. geol. soc. Manch., xviii: 281.
1885. " Foss. ins. prim. rocks, 13.
1885. " Jahrb. geol. reichsanst., xxxv: 657.
1889. Lesley. Dict. foss. Penns., i: 271–272. *Fig.*
1889. Miller. N. A. geol. and pal., 577–578. *Fig.* 1085.
1889. Nicholson. Man. palæont., 3d ed., i: 594. *Fig.* 444.
See also Dictyoneura haplophlebia.

328 Haplophlebium longipennis. (Protophasmida.)

Locality: Pittston, Pa. Horizon: Carboniferous.

1885. Scudder. Proc. Amer. acad. arts sc., xx: 172.
1885. Brongniart. Bull. soc. amis sc. Rouen, (3), xxi: 61.
1885. " Geol. mag., (3), ii: 4–8.
1885. " Trans. geol. soc. Manch., xviii: 281.
1885. " Foss. ins. prim. rocks, 13.
1885. " Jahrb. geol. reichsanst., xxxv: 657.
1889. Lesley. Dict. foss. Penns., i: 272 (longipinnis).
1889. Miller. N. A. geol. and pal., 578.

Haplophlebium longipinnis. See Haplophlebium longipennis.

329. Hermatoblattina kirkbyi. (Palæoblattariæ.)

Locality: Fifeshire, Scotland. Horizon: Upper Carboniferous.

1887. Scudder. Proc. Bost. soc. nat. hist., xxiii: 357.
See also Lithomylacris kirkbyi.

330. Hermatoblattina lebachensis. (Palæoblattariæ.)

Locality: Lebach, Germany. Horizon: Dyas.

1879. Scudder. Mem. Bost. soc. nat. hist., iii: 117–118. *Pl.* 4, *fig.* 11.
1890. " Foss. ins. N. A., i: 137–138. *Pl.* 4, *fig.* 11.
See also Blattina lebachensis.

331. Hermatoblattina wemmetsweileriensis. (Palæoblattariæ.)

Locality: Wemmetsweiler, Germany. Horizon: Upper Carboniferous.

1879. Scudder. Mem. Bost. soc. nat. hist., iii: 115–116. *Pl.* 4, *fig.* 14.
1883. Kliver. Neue blatt. Saarbr., 8–9. *Pl.* 1, *figs.* 4, 4*a*.
1883. " Palaeontogr., xxix: 256–257. *Pl.* 34, *figs.* 4, 4*a*.
1890. Scudder. Foss. ins. N. A., i: 135–136. *Pl.* 4, *fig.* 14.
See also Blattina wemmetsweileriensis, B. (Hermatoblattina) wemmetsweileriensis.

332. Leptoblattina exilis. (Palæoblattariæ.)

Locality: Coseley, vicinity Dudley, England. Horizon: Carboniferous.

1887. Woodward. Geol. mag., (3), iv: 56–58. *Pl.* 2, *figs.* 2–3; *Pl.* 12, *fig.* 2.

333. Leptoblattina insignis. (Palæoblattariæ.)

Locality: Saarbrück, Germany. Horizon: Middle Carboniferous.

1887. Woodward. Geol. mag., (3), iv: 58.
See also Etoblattina insignis, etc.

Libellula borinensis. See Breyeria borinensis.

Lithomantis carbonaria. See I, NEUROPT., Idem.

334. **Lithomylacris angusta.** (Palæoblattariæ.)

Locality: Pittston, Pa. Horizon: Upper Carboniferous.

1879.	Scudder.	Mem. Bost. soc. nat. hist., iii: 48–50 (angustum). *Pl.* 5, *figs.* 2–3.
1883.	Lacoe.	List pal. foss. ins., 10.
1885.	Scudder.	Zittel, Handb. palaeont., i, th. ii: 754. *Fig.* 931.
1886.	“	Zittel-Barrois, Traité de paléont., ii: 754. *Fig.* 948.
1889.	Lesley.	Dict. foss. Penns., i: 351. 3 *figs.*
1889.	Miller.	N. A. geol. and pal., 579. *Fig.* 1089.
1890.	Scudder.	Foss. ins. N. A., i: 68–70. *Pl.* 5, *figs.* 2–3.

335. **Lithomylacris kirkbyi.** (Palæoblattariæ.)

Locality: Meithil, Fifeshire, Scotland. Horizon: Upper Carboniferous.

1887.	Woodward.	Geol. mag., (3), iv: 55-56. *Pl.* 2, *fig.* 4*ab*.

See also Hermatoblattina kirkbyi.

336. **Lithomylacris pauperata.** (Palæoblattariæ.)

Locality: Port Griffith, Pa. Horizon: Carboniferous.

1883.	Scudder.	Mss. (pauperatum).
1883.	Lacoe.	List pal. foss. ins., 10.
1889.	Lesley.	Dict. foss. Penns., i: 352.
1890.	Scudder.	Mem. Bost. soc. nat. hist., iv: 409–410. *Pl.* 32, *fig.* 5.
1890.	“	Foss. ins. N. A., i: 385–386. *Pl.* 24, *fig.* 5.

337. **Lithomylacris pittstoniana.** (Palæoblattariæ.)

Locality: Pittston, Pa. Horizon: Upper Carboniferous.

1879.	Scudder.	Mem. Bost. soc. nat. hist., iii: 50–51 (pittstonianum). *Pl.* 5, *figs.* 4, 10.
1883.	Lacoe.	List pal. foss. ins., 10.
1889.	Lesley.	Dict. foss. Penns., i: 352. 2 *figs.*
1890.	Scudder.	Foss. ins. N. A., i: 70–71. *Pl.* 5, *figs.* 4, 10.

338. **Lithomylacris simplex.** (Palæoblattariæ.)

Locality: Vicinity Danville, Ill. Horizon: Lower Carboniferous.

1879.	Scudder.	Mem. Bost. soc. nat. hist., iii: 51–52. *Pl.* 5, *fig.* 5.
1883.	Lacoe.	List pal. foss. ins., 10.
1889.	Lesley.	Dict. foss. Penns., i: 351, xxxi.
1889.	Miller.	N. A. geol. and pal., 579.
1890.	Scudder.	Foss. ins. N. A., i: 71–72. *Pl.* 5, *fig.* 5.

Lithophasma lithanthraca. See I, NEUROPT., Idem.

339. **Litoneura anthracophila.** (Protophasmida.)

Locality: Gersweiler, Germany. Horizon: Carboniferous.

1885.	Scudder.	Proc. Amer. acad. arts sc., xx: 169.

See also Dictyoneura anthracophila, Goldenbergia anthracophila.

340. **Litoneura laxa.** (Protophasmida.)

Locality: Dudweiler, Germany. Horizon: Carboniferous.

1885.	Scudder.	Proc. Amer. acad. arts sc., xx: 169.

See also Termes laxus, etc.

341. Litoneura obsoleta. (Protophasmida.)

Locality: Altenwald, Germany. Horizon: Carboniferous.

1885.	Scudder.	Proc. Amer. acad. arts. sc., xx: 169.

See also Dictyoneura obsoleta, etc.

342. Mantis? ——.

Locality: Mazon Creek, Ill. Horizon: Carboniferous.

1868.	Scudder.	Worthen, Geol. surv. Ill., iii: 567–568. *Fig.* 3.

Megablattina kliveri. See I, HEMIPT., Idem.

343. Meganeura monyi. (Protophasmida.)

Locality: Commentry, France. Horizon: Carboniferous.

1885.	Brongniart.	Bull. soc. amis sc. Rouen, (3), xxi: 60.
1885.	"	Rev. scient., (3), xxxvi: 277.
1885.	"	Geol. mag., (3), ii: 487.
1885.	"	Trans. geol. soc. Manch., xviii: 279–280.
1885.	"	Foss. ins. prim. rocks, 11.

See also Dictyoneura monyi, etc.

344. Meganeura (Dictyoneura) monyi. (Protophasmida.)

Locality: Commentry, France. Horizon: Carboniferous.

1886.	Brauer.	Ann. naturhist. hofmus., i: 107–108, 114.

See also Dictyoneura monyi, etc.

345. Megaptilus blanchardi.

Locality: Commentry, France. Horizon: Carboniferous.

1885.	Brongniart.	Bull. soc. amis sc. Rouen, (3), xxi: 61.
1885.	"	Rev. scient., (3), xxxvi: 277.
1885.	"	Geol. mag., (3), ii: 488.
1885.	"	Trans. geol. soc. Manch., xviii: 281.
1885.	"	Foss. ins. prim. rocks, 13.
1885.	"	Jahrb. geol. reichsanst., xxxv: 657.
1886.	Brauer.	Ann. naturh. hofmus., i: 109, 110.

See also Titanophasma fayoli.

346. Mylacris anthracophila. (Palæoblattariæ.)

Locality: Colchester, Ill. Horizon: Lower Coal Measures.

1868.	Scudder.	Worthen, Geol. surv. Ill., iii: 568–570. *Figs.* 5, 6.
1879.	"	Mem. Bost. soc. nat. hist., iii: 45–47 (anthracophilum). *Pl.* 5, *figs.* 6–8.
1883.	Lacoe.	List pal. foss. ins., 11–12.
1884.	Scudder.	Mem. Bost. soc. nat. hist., iii: 307.
1885.	"	Zittel, Handb. palaeont., i, ii: 754. *Fig.* 930.
1886.	"	Zittel-Barrois, Traité de paléont., ii: 754. *Fig.* 947.
1886.	"	Miall, Cockroach, 212. *Fig.* 121.
1887.	Woodward.	Geol. mag., (3), iv: 55. *Fig.* 5.
1889.	Lesley.	Dict. foss. Penns., i: 435. *Fig.*
1889.	Miller.	N. A. geol. and pal., 579. *Figs.* 1091, 1092.
1890.	Scudder.	Foss. ins. N. A., i: 65–67, 271. *Pl.* 5, *figs.* 6–8.

347. **Mylacris antiqua.** (Palæoblattariæ.)

Locality: Mazon Creek, Ill. Horizon: Carboniferous.

1884.	Scudder.	Mem. Bost. soc. nat. hist., iii: 300–301 (antiquum).
1889.	Lesley.	Dict. foss. Penns., i: 435.
1889.	Miller.	N. A. geol. and pal., 579.
1890.	Scudder.	Foss. ins. N. A., i: 264–265.

348. **Mylacris bretonensis.** (Palæoblattariæ.)

Locality: Sydney, Cape Breton. Horizon: Middle Carboniferous.

1879.	Scudder.	Mem. Bost. soc. nat. hist., iii: 41–42 (bretonense). *Pl.* 5, *fig.* 1.
1883.	Lacoe.	List pal. foss. ins., 12.
1884.	Scudder.	Mem. Bost. soc. nat. hist., iii: 300.
1889.	Lesley.	Dict. foss. Penns., i: 435.
1889.	Miller.	N. A. geol. and pal., 579.
1890.	Scudder.	Foss. ins. N. A., i: 61–62, 264. *Pl.* 5, *fig.* 1.

See also Blattina bretonensis.

349. **Mylacris carbonum.** (Palæoblattariæ.)

Localities: Wilkes Barre, Cannelton, Pa. Horizon: Carboniferous.

1883.	Scudder.	MSS.
1883.	Lacoe.	List pal. foss. ins., 12.
1884.	Scudder.	Mem. Bost. soc. nat. hist., iii: 304–307. *Pl.* 27, *figs.* 6, 7, 10.
1889.	Lesley.	Dict. foss. Penns., i: 435.
1889.	Miller.	N. A. geol. and pal., 579.
1890.	Scudder.	Foss. ins. N. A., i: 268–271. *Pl.* 13, *figs.* 6, 7, 10.

350. **Mylacris heeri.** (Palæoblattariæ.)

Locality: Sydney, Cape Breton. Horizon: Middle Carboniferous.

1879.	Scudder.	Mem. Bost. soc. nat. hist., iii: 43-44. *Pl.* 5, *fig.* 11.
1883.	Lacoe.	List pal. foss. ins., 12.
1884.	Scudder.	Mem. Bost. soc. nat. hist., iii: 300.
1889.	Lesley.	Dict. foss. Penns., i: 435.
1889.	Miller.	N. A. geol. and pal., 579.
1890.	Scudder.	Foss. ins. N. A., i: 63–64, 264. *Pl.* 5, *fig.* 11.

See also Blattina heeri.

351. **Mylacris lucifuga.** (Palæoblattariæ.)

Locality: Pittston, Pa. Horizon: Carboniferous.

1883.	Scudder.	Mss. (lucifugum).
1883.	Lacoe.	List pal. foss. ins., 12.
1884.	Scudder.	Mem. Bost. soc. nat. hist., iii: 301–302. *Pl.* 27, *fig.* 8.
1889.	Lesley.	Dict. foss. Penns., i: 435.
1890.	Scudder.	Foss. ins. N. A., i: 265–266. *Pl.* 13, *fig.* 8.

352. **Mylacris mansfieldi.** (Palæoblattariæ.)

Locality: Cannelton, Pa. Horizon: Lower Carboniferous.

1879.	Scudder.	Mem. Bost. soc. nat. hist., iii: 47. *Pl.* 5, *fig.* 15.
1883.	Lacoe.	List pal. foss. ins., 12.
1884.	Scudder.	Mem. Bost. soc. nat. hist., iii: 308.
1889.	Lesley.	Dict. foss. Penns., i: 436. *Fig.*
1890.	Scudder.	Mem. Bost. soc. nat. hist., iv: 377–378.
1890.	"	Foss. ins. N. A., i: 67, 272, 401–402. *Pl.* 5, *fig.* 15.

353. Mylacris ovalis. (Palæoblattariæ.)

Locality: Cannelton, Pa. Horizon: Carboniferous.

1883.	Scudder.	Mss. (ovale).
1883.	Lacoe.	List pal. foss. ins., 12.
1884.	Scudder.	Mem. Bost. soc. nat. hist., iii: 308–309. *Pl.* 27, *fig.* 5.
1889.	Lesley.	Dict. foss. Penns., i: 436.
1889.	Miller.	N. A. geol. and pal., 579.
1890.	Scudder.	Foss. ins. N. A., i: 272–273. *Pl.* 13, *fig.* 5.

354. Mylacris packardii. (Palæoblattariæ.)

Locality: Bristol, R. I. Horizon: Carboniferous.

1885.	———	Rand. notes nat. hist., ii: 64 (name only).

See also Blatta americana.

355. Mylacris pennsylvanica. (Palæoblattariæ.)

Locality: Cannelton, Pa. Horizon: Carboniferous.

1879.	Scudder.	Mem. Bost. soc. nat. hist., iii: 44–45 (pennsylvanicum). *Pl.* 5, *figs.* 13–14.
1883.	Lacoe.	List pal. foss. ins., 12–13.
1884.	Scudder.	Mem. Bost. soc. nat. hist., iii: 302–304. *Pl.* 27, *fig.* 11.
1889.	Lesley.	Dict. foss. Penns., i: 436. 2 *figs.*
1889.	Miller.	N. A. geol. and pal., 579.
1890.	Scudder.	Foss. ins. N. A., i: 64–65, 266–268. *Pl.* 5, *figs.* 13, 14; *Pl.* 13, *fig.* 11.

356. Mylacris priscovolans. (Palæoblattariæ.)

Locality: Cannelton, Pa. Horizon: Carboniferous.

1883.	Scudder.	Mss.
1883.	Lacoe.	List pal. foss. ins., 13.
1884.	Scudder.	Mem. Bost. soc. nat. hist., iii: 307–308. *Pl.* 27, *fig.* 9.
1889.	Lesley.	Dict. foss. Penns., i: 436.
1889.	Miller.	N. A. geol. and pal., 579.
1890.	Scudder.	Foss. ins. N. A., i: 271–272. *Pl.* 13, *fig.* 9.

357. Necymylacris heros. (Palæoblattariæ.)

Locality: Cannelton, Pa. Horizon: Lower Carboniferous.

1879.	Scudder.	Mem. Bost. soc. nat. hist., iii: 54–56. *Pl.* 5, *fig.* 9.
1883.	Lacoe.	List pal. foss. ins., 13.
1889.	Miller.	N. A. geol. and pal., 579.
1890.	Lesley.	Dict. foss. Penns., ii: 448. *Fig.*
1890.	Scudder.	Foss. ins. N. A., i: 74–76. *Pl.* 5, *fig.* 9.

358. Necymylacris lacoana. (Palæoblattariæ.)

Locality: Vicinity Pittston, Pa. Horizon: Lower Carboniferous.

1879.	Scudder.	Mem. Bost. soc. nat. hist., iii: 53–54 (lacoanum). *Pl.* 5, *fig.* 12.
1883.	Lacoe.	List. pal. foss. ins., 13.
1889.	Miller.	N. A. geol. and pal., 579.
1890.	Lesley.	Dict. foss. Penns., ii: 448. *Fig.*
1890.	Scudder.	Foss. ins. N. A., i: 73–74. *Pl.* 5, *fig.* 12.

359. Œdischia williamsonii.

Locality: Commentry, France. Horizon: Carboniferous.

1885.	Brongniart.	Bull. soc. amis sc. Rouen, (3), xxi: 58–59. *Pl.* 1, *fig.* 3.

360. Oryctoblattina arndti. (Palæoblattariæ.)

Locality: Třemošná, Bohemia. Horizon: Carboniferous.

1888.	Kušta.	Veštn. král. česke spol. nauk, 1888: 387–393. *Fig.*

361. Oryctoblattina oblonga. (Palæoblattariæ.)

Locality: Weissig, Germany. Horizon: Dyas.

1882.	Deichmüller.	Sitzungsb. gesellsch. Isis, 1882: 41–42. *Pl.* 1, *fig.* 4.

362. Oryctoblattina occidua. (Palæoblattariæ.)

Locality: Mazon Creek, Ill. Horizon: Carboniferous.

1885.	Scudder.	Proc. acad. nat. sc. Philad., 1885: 37.
1889.	Miller.	N. A. geol. and pal., 579.
1890.	Lesley.	Dict. foss. Penns., ii: 503.
1890.	Scudder.	Mem. Bost. soc. nat. hist., iv: 414–415. *Pl.* 32, *fig.* 3.
1890.	"	Foss. ins. N. A., i: 390–391. *Pl.* 24, *fig.* 3.

363. Oryctoblattina reticulata. (Palæoblattariæ.)

Locality: Wettin, Saxony. Horizon: Upper Carboniferous.

1879.	Scudder.	Mem. Bost. soc. nat. hist., iii: 122–123. *Pl.* 4, *fig.* 13.
1890.	"	Foss. ins. N. A., i: 142–143. *Pl.* 4, *fig.* 13.

See also Blattina reticulata.

364. Pachytylopsis borinensis. (Protophasmida.)

Locality: Mons, Belgium. Horizon: Carboniferous.

1875.	Borre.	Comptes rend. soc. ent. Belg., (2), xii: 17.
1875.	"	Ann. soc. ent. Belg., xviii: 4–5. *Pl.* 5, *fig.* 2; *Pl.* 6, *fig.* 2.
1875.	"	Empr. d'ins. foss., 4–5. *Pl.* 5, *fig.* 2; *Pl.* 6, *fig.* 2.
1875.	Giard.	Bull. sc. hist. litt. dép. Nord, vii: 122–127.

See also Breyeria borinensis.

Pachytylopsis persenairei. See I, NEUROPT., Idem.

Palæoblattina douvillei. See I, NEUROPT., Idem.

365. Paolia gurleyi. (Protophasmida.)

Locality: Orange County, Ind. Horizon: Carboniferous.

1885.	Scudder.	Proc. Amer. acad. arts sc., xx: 173.
1889.	Miller.	N. A. geol. and pal., 580.
1890.	Lesley.	Dict. foss. Penns., ii: 595.

366. Paolia lacoana. (Protophasmida.)

Locality: Pittston, Pa. Horizon: Carboniferous.

1885.	Scudder.	Proc. Amer. acad. arts sc., xx: 173.
1889.	Miller.	N. A. geol. and pal., 580.
1890.	Lesley.	Dict. foss. Penns., ii: 595.

367. Paolia superba. (Protophasmida.)

Locality: Mazon Creek, Ill. Horizon: Carboniferous.

1885.	Scudder.	Proc. Amer. acad. arts sc., xx: 173.
1889.	Miller.	N. A. geol. and pal., 580.
1890.	Lesley.	Dict. foss. Penns., ii: 595.

368. **Paolia vetusta.** (Protophasmida.)

Locality: Paoli, Ind. Horizon: Carboniferous.

1871.	Smith.	Amer. journ. sc., (3), i: 44–46. *Fig.*
1871.	“	Notice foss. ins., 1–3. *Fig.*
1883.	Lacoe.	List pal. foss. ins., 13.
1885.	Scudder.	Proc. Amer. acad. arts sc., xx: 173.
1885.	“	Zittel, Handb. palaeont., i, th. ii: 758. *Fig.* 942.
1886.	“	Zittel-Barrois, Traité de paléont., ii: 758. *Fig.* 958.
1889.	Miller.	N. A. geol. and pal., 580.
1890.	Lesley.	Dict. foss. Penns., ii: 596. *Fig.*

369. **Paromylacris ampla.** (Palæoblattariæ.)

Locality: Mazon Creek, Ill. Horizon: Carboniferous.

1890.	Scudder.	Mem. Bost. soc. nat. hist., iv: 408. *Pl.* 31, *fig.* 7.
1890.	“	Foss. ins. N. A., i: 384. *Pl.* 23, *fig.* 7.

370. **Paromylacris rotunda.** (Palæoblattariæ.)

Locality: Mazon Creek, Ill. Horizon: Carboniferous.

1883.	Scudder.	Mss. (rotundum).
1883.	Lacoe.	List pal. foss. ins., 13.
1885.	Scudder.	Proc. acad. nat. sc. Philad., 1885: 35.
1885.	“	Zittel, Handb. palaeont., i, th. ii: 754.
1886.	“	Zittel-Barrois, Traité de paléont., ii: 754.
1886.	“	Bull. U. S. geol. surv., No. 31: 38.
1889.	Miller.	N. A. geol. and pal., 580.
1890.	Lesley.	Dict. foss. Penns., ii: 602.
1890.	Scudder.	Mem. Bost. soc. nat. hist., iv: 406–408. *Pl.* 32, *figs.* 1–2.
1890.	“	Foss. ins. N. A., i: 382–384. *Pl.* 24, *figs.* 1–2.

371. **Petrablattina gracilis.** (Palæoblattariæ.)

Locality: Lebach, Germany. Horizon: Dyas.

1879.	Scudder.	Mem. Bost. soc. nat. hist., iii: 124–125. *Pl.* 4, *fig.* 4.
1890.	“	Foss. ins. N. A., i: 144–145. *Pl.* 4, *fig.* 4.

See also Blattina gracilis, Blatta gracilis.

372. **Petrablattina sepulta.** (Palæoblattariæ.)

Locality: Sydney, Cape Breton. Horizon: Lower Carboniferous.

1879.	Scudder.	Mem. Bost. soc. nat. hist., iii: 125–126. *Pl.* 6, *fig.* 7.
1883.	Lacoe.	List pal. foss. ins., 14.
1889.	Miller.	N. A. geol. and pal., 580.
1890.	Lesley.	Dict. foss. Penns., ii: 627.
1890.	Scudder.	Foss. ins. N. A., i: 145–146. *Pl.* 6, *fig.* 7.

See also Blattina sepulta.

Petrablattina subtilis. See I, NEUROPT., Idem.

373. **Polioptenus elegans.** (Protophasmida.)

Locality: Dudweiler, Germany. Horizon: Carboniferous.

1885.	Scudder.	Proc. Amer. acad. arts sc., xx: 170.
1885.	“	Zittel, Handb. palaeont., i, th. ii: 756. *Fig.* 938.
1886.	“	Zittel-Barrois, Traité de paléont., ii: 757. *Fig.* 954.
1886.	“	Bull. U. S. geol. surv., No. 31: 40.

See also Dictyoneura elegans, Goldenbergia elegans.

374. **Polyzosterites granosus.** (Palæoblattariæ.)

Locality: Jägersfreude, Saarbrück, Germany. Horizon: Carboniferous.

1867.	Goldenberg.	Vorweltl. fauna steink. Saarbr., 18. *Pl.* 1, *fig.* 17 (ined.).
1873.	"	Fauna saræp. foss., i: 18. *Pl.* 1, *fig.* 17.
1877.	"	Fauna saræp. foss., ii: 20, 51.
1879.	Scudder.	Mem. Bost. soc. nat. hist., iii: 129.
1890.	"	Foss ins. N. A., i: 149.

See also Adelophthalmus (Eurypterus) granosus.

375. **Progonoblattina fritschii.** (Palæoblattariæ.)

Locality: Manebach, Thüringen. Horizon: Upper Carboniferous.

1879.	Scudder.	Mem. Bost. soc. nat. hist., iii: 120–121. *Pl.* 3, *fig.* 12.
1885.	"	Zittel, Handb. palaeont., i, th. ii: 755. *Fig.* 934.
1886.	"	Zittel-Barrois, Traité de paléont., ii: 755. *Fig.* 951.
1890.	"	Foss. ins. N. A., i: 140–141. *Pl.* 3, *fig.* 12.

See also Blattina fritschii.

376. **Progonoblattina helvetica.** (Palæoblattariæ.)

Locality: Erbignon, Switzerland. Horizon: Carboniferous.

1879.	Scudder.	Mem. Bost. soc. nat. hist., iii: 119–120. *Pl.* 3, *fig.* 10.
1887.	Woodward.	Geol. mag., (3), iv: 50. *Figs*, 1, 2.
1889.	Nicholson.	Man. palæont., 3d ed., i: 593. *Fig.* 443.
1890.	Scudder.	Foss. ins. N. A., i: 139–140. *Pl.* 3, *fig.* 10.

See also Blattina helvetica, Blatta helvetica.

377. **Promylacris ovalis.** (Palæoblattariæ.)

Locality: Mazon Creek, Ill. Horizon: Carboniferous.

1885.	Scudder.	Proc. acad. nat. sc. Philad., 1885: 34–35 (ovale).
1885.	"	Zittel, Handb. palaeont., i, th. ii: 754.
1886.	"	Zittel-Barrois, Traité de paléont., ii: 754.
1886.	"	Bull. U. S. geol. surv., No. 31: 38.
1889.	Miller.	N. A. geol. and pal., 580.
1890.	Lesley.	Dict. foss. Penns., ii: 772.
1890.	Scudder.	Mem. Bost. soc. nat. hist., iv: 403, 404. *Pl.* 31, *figs.* 1–4.
1890.	"	Foss. ins. N. A., i: 379, 380. *Pl.* 23, *figs.* 1–4.

378. **Promylacris rigida.** (Palæoblattariæ.)

Locality: Mazon Creek, Ill. Horizon: Carboniferous.

1890.	Scudder.	Mem. Bost. soc. nat. hist., iv: 403, 404–405. *Pl.* 31, *fig.* 6.
1890.	"	Foss. ins. N. A., i: 379, 380–381. *Pl.* 23, *fig.* 6.

379. **Promylacris testudo.** (Palæoblattariæ.)

Locality: Mazon Creek, Ill. Horizon: Carboniferous.

1890.	Scudder.	Mem. Bost. soc. nat. hist., iv: 403. *Pl.* 32, *fig.* 6.
1890.	"	Foss. ins. N. A., i: 379. *Pl.* 24, *fig.* 6.

Protogryllacris brongniarti. See I, NEUROPT., Idem.

380. **Protophasma dumasii.** (Protophasmida.)

Locality: Commentry, France. Horizon: Carboniferous.

1878.	Brongniart.	Compt. rend. soc. ent. Belg., (2), xlvii: 9–12.
1878.	"	Découv. orth. coureur, 1–4.

1878.	Brongniart.	Ann. sc. nat., (6), vii, art. 1. *Pl.* 6, *figs*. 1–4, 6, 9.
1878.	"	Nouv. genre orthop. foss., 1–9. *Pl.* 6, *figs*. 1–4, 6, 9.
1878.	"	Bull. séanc. soc. ent. France, 1878: 69–70.
1879.	"	Geol. mag., (2), vi: 97–102. *Pl.* 4, *figs*. 1–4, 6, 9.
1879.	"	New foss. ins. coal-meas., 1–6. *Pl.* 4, *figs*., 1–4, 6, 9.
1879.	Scudder.	Mem. Bost. soc. nat. hist., iii: 19.
1879.	Girard.	La nature, vii: 108–110. *Fig.*
1880.	Scudder.	Arch. sc. phys. nat., (3), iii: 365.
1883	Brongniart.	Bull. séanc. soc. ent. France, 1883: 20–21.
1883.	"	Naturaliste, v: 267.
1883.	"	Aperçu ins. foss., 3, 5.
1885.	Scudder.	Proc. amer. acad. arts sc., xx: 170.
1885.	"	Zittel, Handb. palaeont., i, th. ii: 757. *Fig.* 939.
1886.	"	Zittel-Barrois, Traité de paléont., ii: 756. *Fig.* 955 on *p.* 757.
1886.	"	Bull. U. S. geol. surv., No. 31: 40.
1886.	Brauer.	Ann. naturhist. hofmus. i: 116.
1890.	Scudder.	Foss. ins. N. A., i: 39.

381. Protophasma gaudryi. (Protophasmida.)

Locality: Commentry, France. Horizon: Carboniferous.

1885.	Brongniart.	Bull. soc. amis sc. Rouen, (3), xxi: 59. *Pl.* 2, *fig*. 1.

382. Protophasma woodwardii. (Protophasmida.)

Locality: Commentry, France. Horizon: Carboniferous.

1883.	Brongniart.	Bull. séanc. soc. ent. France, 1883: 20–21.
1883.	"	Naturaliste, v: 267.
1883.	"	Aperçu ins. foss., 5.

Prototettix lithanthraca. See I, NEUROPT., Idem.

383. Spilaptera libelluloides.

Locality: Commentry, France. Horizon: Carboniferous.

1885.	Brongniart.	Bull. soc. amis sc. Rouen, (3), xxi: 63.
1885.	"	Geol. mag., (3), ii: 489.
1885.	"	Trans. geol. soc. Manch., xviii: 283.
1885.	"	Foss. ins. prim. rocks, 15.
1885.	"	Jahrb. geol. reichsanst., xxxv: 658.

384. Spilaptera packardi.

Locality: Commentry, France. Horizon: Carboniferous.

1885.	Brongniart.	Ins. foss. terr. prim., 63. *Pl.* [5], *fig*. 1.
1885.	"	Bull. soc. amis sc. Rouen, (3), xxi: 63.
1885.	"	Geol. mag., (3), ii: 489.
1885.	"	Trans. geol. soc. Manch., xviii: 283.
1885.	"	Foss. ins. prim. rocks, 15.
1885.	"	Jahrb. geol. reichsanst., xxxv: 658.
1886.	Brauer.	Ann. naturh. hofmus., i: 110. *Pl.* 8, *fig*. 16.

385. Spilaptera venusta.

Locality: Commentry, France. Horizon: Carboniferous.

1885.	Brongniart.	Bull. soc. amis sc. Rouen, (3), xxi: 63.
1885.	"	Geol. mag., (3), ii: 489.
1885.	"	Trans. geol. soc. Manch., xviii: 283.
1885.	"	Foss. ins. prim. rocks, 15.
1885.	"	Jahrb. geol. reichsanst., xxxv: 658.

386. Sthenarocera pachytyloides.

Locality: Commentry, France. **Horizon**: Carboniferous.

1885. **Brongniart.** Bull. soc. amis. sc. Rouen, (3), xxi: 59. *Pl.* 1, *figs.* 1–2.
1885. " Rev. scient., (3), xxxvi: 276.

387. Sthenaropoda filholi.

Locality: Commentry, France. **Horizon**: Carboniferous.

1885. **Brongniart.** Bull. soc. amis. sc. Rouen, (3), xxi: 59. *Pl.* 1, *fig.* 5.

388. Sthenaropoda fischeri.

Locality: Commentry, France. **Horizon**: Carboniferous.

1885. **Brongniart.** Bull. soc. amis. sc. Rouen, (3), xxi: 59. *Pl.* 1, *fig.* 4.

389. Termes affinis. (Protophasmida.)

Locality: Sulzbach, Germany. **Horizon**: Carboniferous.

1852. **Goldenberg.** Sitzungsb. math.-nat. cl. akad. wiss. Wien, ix: 39 (undescr.).
1877. " Fauna saræp. foss., ii: 50.

See also T. (Eutermopsis) affinis, T. (Calotermes) affinis, Dictyoneura affinis. Goldenbergia affinis; also III, NEUROPT., Termes (Calotermes) affinis.

390. Termes (Calotermes) affinis. (Protophasmida.)

Locality: Altenwald, Germany. **Horizon**: Carboniferous.

1867. **Goldenberg.** Vorweltl. fauna steink. Saarbr., 11. *Pl.* 2, *fig.* 5 (ined.).
1873. " Fauna saræp. foss., i: 11. *Pl.* 2, *fig.* 6 (not 5).

See also Termes affinis, etc.; also III, NEUROPT., Termes (Calotermes) affinis.

391. Termes (Eutermopsis) affinis. (Protophasmida.)

Locality: Friedrichsthal, Germany. **Horizon**: Carboniferous.

1854. **Goldenberg.** Palaeontogr., iv: 31–32. *Pl.* 6, *fig.* 1.
1854. " Foss. ins. Saarbr., 15–16. *Pl.* 4, *fig.* 1.
1856. **Giebel.** Insect. d. vorwelt, 298.
1857. **Hagen.** Verhandl. naturh. ver. preuss. Rheinl. Westph., xiv: 42–43.

See also Termes affinis, etc.

392. Termes decheni. (Protophasmida.)

Locality: Altenwald, Germany. **Horizon**: Carboniferous.

1885. **Brauer.** Sitzungsb. akad. wiss. Wien, xci: 281.

See also T. (Eutermopsis) decheni, etc.

393. Termes (Calotermes) decheni. (Protophasmida.)

Localities: Gersweiler, Altenwald, Germany. **Horizon**: Carboniferous.

1867. **Goldenberg.** Vorweltl. fauna steink. Saarbr., 10–11. *Pl.* 2, *figs.* 3–5 (ined.).
1873. " Fauna saræp. foss., 10–11. *Pl.* 2, *figs.* 3–5.

See also T. (Eutermopsis) decheni, etc.

394. Termes (Eutermopsis) decheni. (Protophasmida.)

Locality: Altenwald, Germany. **Horizon**: Carboniferous.

1854. **Goldenberg.** Palaeontogr., iv: 31. *Pl.* 5, *fig.* 3.
1854. " Foss. ins. Saarbr., 15. *Pl.* 3, *fig.* 3.
1856. **Giebel.** Insect. d. vorwelt, 297–298.
1857. **Hagen.** Verhandl. naturh. ver. preuss. Rheinl. Westph., xiv: 42–43.

See also Termes decheni, Dictyoneura decheni, Goldenbergia decheni, **Termes (Calotermes) decheni, Termes (Eutermopsis) formosus, etc.**

395. Termes (Eutermopsis) formosus. (Protophasmida.)

Locality: Gersweiler, Germany. Horizon: Carboniferous.

1854. Goldenberg. Palaeontogr., iv: 30–31. *Pl.* 5, *fig.* 2.
1854. " Foss. ins. Saarbr., 14–15. *Pl.* 3, *fig.* 2.
1856. Giebel. Insect. d. vorwelt, 297.
1857. Hagen. Verhandl. naturh. ver. preuss. Rheinl. Westph., xiv: 42–43.
1860. " Linn. entom., xii: 296.
1867. Goldenberg. Vorweltl. fauna steink. Saarbr., 10 (= T. decheni).

See also Goldenbergia formosa, Dictyoneura formosa, Termes (Eutermopsis) decheni, etc.

396. Termes haidingeri. (Termitina.)

Locality: Flenu, Belgium. Horizon: Carboniferous.

1881. Mourlon. Géol. Belg., ii: 57.

See also I, NEUROPT., Termes? ——— Borre.

397. Termes heeri. (Protophasmida.)

Locality: Sulzbach, Germany. Horizon: Carboniferous.

1852. Goldenberg. Sitzungsb. math.-nat. cl. akad. wiss. Wien, ix: 39 (undescr.).

See also T. (Eutermopsis) heeri, etc.

398. Termes (Calotermes) heeri. (Protophasmida.)

Locality: Altenwald, Germany. Horizon: Carboniferous.

1867. Goldenberg. Vorweltl. fauna steink. Saarbr., 9–10. *Pl.* 2, *fig.* 2 (ined.).
1873. " Fauna saræp. foss., i: 9–10. *Pl.* 2, *fig.* 2.
1877. " Fauna saræp. foss., ii: 50.

See also T. (Eutermopsis) heeri, etc.

399. Termes (Eutermopsis) heeri. (Protophasmida.)

Locality: Altenwald, Germany. Horizon: Carboniferous.

1854. Goldenberg. Palaeontogr., iv: 29–30. *Pl.* 4, *fig.* 5.
1854. " Foss. ins. Saarbr., 13–14. *Pl.* 2, *fig.* 5.
1856. Giebel. Insect. d. vorwelt., 297.
1857. Hagen. Verhandl. naturh. ver. preuss. Rheinl. Westph., xiv: 42–43.
1860. " Linn. entom., xii: 295–296.

See also Termes heeri, Calotermes heeri, Termes (Calotermes) heeri, Goldenbergia heeri.

Termes (Calotermes) humboldti. See Termes (Calotermes) humboldtianus.

400. Termes (Calotermes) humboldtianus. (Protophasmida.)

Locality: Altenwald, Germany. Horizon: Carboniferous.

1867. Goldenberg. Vorweltl. fauna steink. Saarbr., 11–12 (humboldtiana). *Pl.* 2, *fig.* 8 (ined.).
1873. " Fauna saræp. foss., 11–12 (humboldti on plate). *Pl.* 2, *fig.* 8.

See also Dictyoneura humboldtiana, etc.

401. Termes incertus. (Protophasmida.)

Locality: Dudweiler, Germany. Horizon: Carboniferous.

1886. Kliver. Palaeontogr., xxxii: 104–106. *Pl.* 14, *fig.* 5.

402. Termes laxus. (Protophasmida.)

Locality: Dudweiler, Germany. Horizon: Carboniferous.

1877.	Goldenberg.	Fauna saræp. foss., ii: 17, 50 (laxa). *Pl.* 1, *fig.* 5.
1885.	Brauer.	Sitzungsb. akad. wiss. Wien, xci: 281.

See also Litoneura laxa, Goldenbergia laxa.

403. Termes longitudinalis.

Locality: Mazon Creek, Ill. Horizon: Carboniferous.

1883.	Scudder.	Mss.
1883.	Lacoe.	List pal. foss. ins., 15.
1885.	Scudder.	Mem. Bost. soc. nat. hist., iii: 350.
1890.	"	Foss. ins. N. A., i: 314.

See also Goldenbergia longitudinalis.

404. Termes parvulus. (Prophasmida.)

Locality: Michelberg, Saarbrück, Germany. Horizon: Carboniferous.

1886.	Kliver.	Palaeontgr., xxxii: 106–107. *Pl.* 14, *fig.* 6.

Termidium amissum. See Termitidium amissum.

405. Termitidium amissum.

Locality: Altenwald, Germany. Horizon: Carboniferous.

1877.	Goldenberg.	Fauna saræp. foss., ii: 17, 50 (Termidium in pl.). *Pl.* 1, *fig.* 6.
1885.	Scudder.	Mem. Bost. soc. nat. hist., iii: 350.
1890.	"	Foss. ins. N. A., i: 314.

See also Goldenbergia amissa.

406. Termitidium? rugosum.

Locality: Near Cusel, Rheinbayern. Horizon: Carboniferous.

1877.	Goldenberg.	Fauna saræp. foss., ii: 17–18, 50. *Pl.* 1, *fig.* 14.
1885.	Scudder.	Mem. Bost. soc. nat. hist., iii: 350.
1890.	"	Foss. ins. N. A., i: 314.

See ——— ——— Dohrn.

407. Titanophasma fayoli. (Protophasmida.)

Locality: Commentry, France. Horizon: Carboniferous.

1882.	Brongniart.	Comptes rend. acad. sc., xcv: 1228–1230.
1882.	"	Nouv. ins. foss., 1–3.
1883.	"	Compt. rend. soc. geol. Fr., 1883: 15–16.
1883.	"	Bull. soc. géol Fr., (3), xi: 241.
1883.	"	Bull. séances soc. ent. Fr., 1883: 20.
1883.	Scudder.	Science, i: 95–96. *Fig.*
1883.	Brongniart.	Bull. soc. géol. Fr., (3), xi: 145–146. *Pl.* 4, *fig.* 3.
1883.	"	Naturaliste, v: 267–268.
1883.	"	Aperçu ins. foss., 6–8.
1885.	Scudder.	Proc. Amer. acad. arts sc., xx: 169.
1885.	"	Zittel, Handb. palaeont., i, ii: 756. *Fig.* 937.
1886.	"	Zittel-Barrois, Traité de paléont., ii: 756. *Fig.* 953.
1888.	Vidal.	Ins. y plantas, 4, 10.

See also Megaptilus blanchardi.

408. Titanophasma jucunda. (Protophasmida.)

Locality: Pittston, Pa. Horizon: Carboniferous.

1885. Scudder. Proc. Amer. acad. arts sc., xx: 169.
1889. Miller. N. A. geol. and pal., 581.
See also Dictyoneura jucunda.

409. Titanophasma libelluloides. (Protophasmida.)

Locality: Germany. Horizon: Carboniferous.

1885. Scudder. Proc. Amer. acad. arts sc., xx: 169.
See also Dictyoneura libelluloides.

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410. ——— ———.

Locality: Ravenhead, near Liverpool, England. Horizon: Carboniferous.

1871. Higgins. Pres. address (Liverp. nat. field club), 10, 11. *Pl.*, *fig.* 15.

411. ——— ———.

Locality: Reden, Saarbrück, Germany. Horizon: Carboniferous.

1886. Kliver. Palaeontogr., xxxii: 110. *Pl.* 14, *fig.* 10.

412. ——— ———.

Locality: Rakonitz, Bohemia. Horizon: Carboniferous.

1885. Kušta. Sitzungsb. böhm. gesellsch. wiss., 1885: 594.
1885. " Neue foss. arthrop. Rak., 5.

413. ——— ———.

Locality: Alfredgrube near Königshütte, Silesia. Horizon: Carboniferous.

1884. Roemer. Jahresb. schles. gesellsch. vater. cult., xxvi: 226.

414. ——— ——— (Homothetidæ.)

Locality: Mazon Creek, Ill. Horizon: Carboniferous.

1885. Scudder. Mem. Bost. soc. nat. hist., iii: 329. *Pl.* 30, *fig.* 7.
1890. " Foss. ins. N. A., i: 293. *Pl.* 16, *fig.* 7.

415. Acridites carbonarius. (Hemeristina.)

Locality: Wettin, Saxony. Horizon: Carboniferous.

1842. Germar. Münst., Beitr. z. petref., v: 93–94. *Pl.* 13, *fig.* 5.
184–. " Voigt, Naturw. ber. ver. Harzes (carbonatus).
1851. " Verstein. steink. Wettin, 87 (= Blattina didyma?). *Pl.* 31, *fig.* 10.
1856. " Voigt, Naturw. ber. ver. Harzes, 1840–'46: 26 (carbonatus).
See also Blattina carbonaria, etc., Megathentomum carbonatum.

Acridites carbonatus. See Acridites carbonarius, Megathentomum carbonatum.

416. Acridites formosus. (Gerarina.)

Locality: Fischbach, Saarbrück, Germany. Horizon: Carboniferous.

1867. Goldenberg. Vorweltl. fauna steink. Saarbr., 18–20. *Pl.* 2, *fig.* 18 (ined.).
1873. " Fauna saræp. foss., i: 18–20. *Pl.* 2, *fig.* 18.
1876. Scudder. Proc. Bost. soc. nat. hist., xviii: 359.
1877. Goldenberg. Fauna saræp. foss., ii: 51.
See also Megathentomum formosum.

417. Acridites goldenbergi. (Gerarina.)

Locality: Steinbachthal, Saarbrück, Germany. Horizon: Carboniferous.

1886.	Kliver.	Palaeontogr., xxxii: 108–109. *Pl.* 14, *fig.* 9.

418. Acridites priscus. (Homothetidæ.)

Locality: Stradonitz, Bohemia. Horizon: Carboniferous.

1864.	Andree.	Neues jahrb. min., 1864: 163–164. *Pl.* 4, *fig.* 1.
1874.	Frič.	Arch. naturw. landesdurchf. Böhm., 2, ii, i: 15. *Pl.* 3, *fig.* 3.
1884.	Kušta.	Vesmír, xiii: 97–98.
1885.	Scudder.	Mem. Bost. soc. nat. hist., iii: 325.
1885.	Brongniart.	Bull. soc. amis sc. Rouen, (3), xxi: 63.
1885.	"	Geol. mag., (3), ii: 489.
1885.	"	Trans. geol. soc. Manch., xviii: 283.
1885.	"	Foss. ins. prim. rocks, 15.
1885.	"	Jahrb. geol. reichsanst., xxxv: 658.
1885.	Scudder.	Zittel, Handb. palaeont., i, th. ii: 759.
1886.	"	Zittel-Barrois, Traité de paléont., ii: 759.
1886.	"	Bull. U. S. geol. surv., No. 31: 41.
1890.	"	Foss. ins. N. A., i: 289.

Adaphlebia lacoana. See Adiphlebia locoana.

419. Adiphlebia lacoana. (Gerarina.)

Locality: Mazon Creek, Ill. Horizon: Carboniferous.

1885.	Scudder.	Mem. Bost. soc. nat. hist., iii: 345. *Pl.* 32, *fig.* 6.
1885.	"	Zittel, Handb. palaeont., i, th. ii: 763.
1886.	"	Zittel-Barrois, Traité de paléont., ii: 763.
1886.	"	Bull. U. S. geol. surv., No. 31: 45.
1889.	Lesley.	Dict. foss. Penns., i: p. ii (Adaphlebia).
1889.	Miller.	N. A. geol. and pal., 575.
1890.	Scudder.	Foss. ins. N. A., i: 309. *Pl.* 18, *fig.* 6.

420. Æthophlebia singularis. (Palæopterina.)

Locality: Mazon Creek, Ill. Horizon: Carboniferous.

1885.	Scudder.	Mem. Bost. soc. nat. hist., iii: 338. *Pl.* 31, *fig.* 9.
1886.	"	Bull. U. S. geol. surv., No. 31: 43.
1886.	Brauer.	Ann. naturh. hofmus., i: 113.
1889.	Lesley.	Dict. foss. Penns., i: p. ii.
1889.	Miller.	N. A. geol. and pal., 575.
1890.	Scudder.	Foss. ins. N. A., i: 302. *Pl.* 17, *fig.* 9.

421. Anthracothremma robusta. (Homothetidæ.)

Locality: Mazon Creek, Ill. Horizon: Carboniferous.

1885.	Scudder.	Mem. Bost. soc. nat. hist., iii: 327. *Pl.* 30, *figs.* 1, 5, 6.
1886.	"	Bull. U. S. geol. surv., No. 31: 42.
1889.	Lesley.	Dict. foss. Penns., i: p. v.
1889.	Miller.	N. A. geol. and pal., 575.
1890.	Scudder.	Foss. ins. N. A., i: 291. *Pl.* 16, *figs.* 1, 5, 6.

422. Archæoscolex corneus. (Larva.)

Locality: St. John, New Brunswick. Horizon: Cordaite Shales, Lower Devonian

1889.	Matthew.	Trans. roy. soc. Can., 1888, iv: 59–60. *Pl.* 4, *fig.* 11.

Archimantis carbonarius. See Lithomantis carbonarius.

423. Blattina carbonaria. (Hemeristina.)

Locality: Wettin, Saxony. Horizon: Carboniferous.

1864.	Heer.	Viert. naturf. gesellsch. Zürich, ix: 288, No. 15.
1877.	Goldenberg.	Fauna saræp. foss., ii: 20.

See also Lithosialis carbonaria, Acridites carbonarius; also I, ORTHOPT., Blattina carbonaria, B. didyma, etc.

424. Brachyptilus ———.

Locality: Commentry, France. Horizon: Carboniferous.

1885.	Brongniart.	Bull. soc. amis sc. Rouen, (3), xxi: 66.

Breyeria borinensis. See I, ORTHOPT., Idem.

425. Brodia priscocincta. (Hemeristina.)

Locality: Tipton, Staffordshire, England. Horizon: Carboniferous.

1881.	Scudder.	Geol. mag., (2), viii: 293–295, 300. *Fig.*
1883.	"	Mem. Bost. soc. nat. hist., iii: 213–217, 223. *Pl.* 17, *figs.* 3–7.
1885.	"	Mem. Bost. soc. nat. hist., iii: 340.
1885.	Brongniart.	Bull. soc. amis. sc. Rouen, (3), xxi: 63.
1885.	"	Rev. scient., (3), xxxvi: 278.
1885.	"	Geol. mag., (3), ii: 489.
1885.	"	Trans. Manch. geol. soc., xviii: 284.
1885.	"	Foss. ins. prim. rocks, 15.
1885.	"	Jahrb. geol. reichsanst., xxxv: 658.
1885.	Scudder.	Zittel, Handb. palaeont., i, th. ii: 761. *Fig.* 951.
1886.	"	Zittel-Barrois, Traité de paléont., ii: 761. *Fig.* 967.
1886.	Brauer.	Ann. naturh. hofmus., i: 113.
1890.	Scudder.	Foss. ins. N. A., i: 235–239, 245, 304. *Pl.* 11, *figs.* 3–7.

Calotermes hageni. See I, ARACHNIDA, Idem.

Calotermes heeri. See I, ORTHOPT., Idem.

426. Campyloptera ———.

Locality: Commentry, France. Horizon: Carboniferous.

1885.	Brongniart.	Bull. soc. amis. sc. Rouen, (3), xxi: 63.
1885.	"	Rev. scient., (3), xxxvi: 278.

Chelephlebia carbonaria. See Cheliphlebia carbonaria.

Chelephlebia elongata. See Cheliphlebia elongata.

427. Cheliphlebia carbonaria. (Homothetidæ.)

Locality: Mazon Creek, Ill. Horizon: Carboniferous.

1885.	Scudder.	Mem. Bost. soc. nat. hist., iii: 328. *Pl.* 30, *fig.* 8.
1886.	"	Bull. U. S. geol. surv., No. 31: 42.
1889.	Lesley.	Dict. foss. Penns., i: p. xiii (Chelephlebia).
1889.	Miller.	N. A. geol. and pal., 575 (not the figure).
1890.	Scudder.	Foss. ins. N. A., i: 292. *Pl.* 16, *fig.* 8.

428. Cheliphlebia elongata. (Homothetidæ.)

Locality: Mazon Creek, Ill. Horizon: Carboniferous.

1885.	Scudder.	Mem. Bost. soc. nat. hist., iii: 328–329. *Pl.* 29, *fig.* 7.
1886.	"	Bull U. S. geol surv., No. 31: 42.

1889.	Lesley.	Dict. foss. Penns., i: p. xiii (Chelephlebia).
1889.	Miller.	N. A. geol. and pal., 575.
1890.	Scudder.	Foss. ins. N. A., i: 292–293. *Pl.* 15, *fig.* 7.

429. Chrestotes danæ. (Gerarina.)

Locality: Mazon Creek, Ill. Horizon: Carboniferous.

1885.	Brongniart.	Bull. soc. amis. sc. Rouen, (3), xxi: 66.
1885.	"	Geol. mag., (3), ii: 491.
1885.	"	Trans. geol. soc. Manch., xviii: 287.
1885.	"	Foss. ins. prim. rocks, 18.
1885.	"	Jahrb. geol. reichsanst., xxxv: 660.

See also Miamia danæ, Gerarus danæ.

430. Chrestotes lapidea. (Hemeristina.)

Locality: Mazon Creek, Ill. Horizon: Carboniferous.

1868.	Scudder.	Worth., Geol. surv. Ill., iii: 567. *Fig.* 2.
1883.	Lacoe.	List pal. foss. ins., 6.
1885.	Scudder.	Mem. Bost. soc. nat. hist., iii: 341. *Pl.* 31, *fig.* 2.
1885.	Brongniart.	Bull. soc. amis. sc. Rouen, (3), xxi: 66.
1885.	"	Geol. mag., (3), ii: 491.
1885.	"	Trans. geol. soc. Manch., xviii: 287.
1885.	"	Foss. ins. prim. rocks, 18.
1885.	"	Jahrb. geol. reichsanst., xxxv: 660.
1885.	Scudder.	Zittel, Handb. palaeont., i, th. ii: 762. *Fig.* 952.
1886.	"	Zittel-Barrois, Traité de paléont., ii: 762. *Fig.* 968.
1886.	"	Bull. U. S. geol. surv., No. 31: 44.
1886.	Brauer.	Ann. naturh. hofmus., i: 114 (Chrestotus).
1889.	Lesley.	Dict. foss. Penns., i: 130. *Fig.*
1889.	Miller.	N. A. geol. and pal., 575–576. *Fig.* 1076.
1890.	Scudder.	Foss. ins. N. A., i: 305. *Pl.* 17, *fig.* 2.

431. Chrestotes lugauensis. (Homothetidæ.)

Locality: Lugau, Saxony. Horizon: Carboniferous.

1885.	Brongniart.	Bull. soc. amis. sc. Rouen, (3), xxi: 66.
1885.	"	Geol. mag., (3), ii: 491.
1885.	"	Trans. geol. soc. Manch., xviii: 287.
1885.	"	Foss. ins. prim. rocks, 18.
1885.	"	Jahrb. geol. reichsanst., xxxv: 660.

See also Mixotermes lugauensis, etc.

Chrestotus lapidea. See Chrestotes lapidea.

432. Corydalis ———. (Hemeristina.)

Locality: Coalbrookdale, England. Horizon: Carboniferous.

1833.	Audouin.	Ann. soc. ent. France, bull., 7–8.
1839.	Mantell.	Wonders of geology, ii: 680.
1839.	Murchison.	Silurian system, i: 104–105. *Fig. a.*
1854.	"	Siluria, 284. *Fig.* 1.
1854.	Pictet.	Traité pal., 2e ed., ii: 377–378 (Sialidae). *Pl.* 40, *fig.* 1.
1854.	Mantell.	Medals of creation, 2d ed., ii: 556 (Purbecks). *Fig.* 182*ab*.

See also Lithosialis brongniarti, etc.

433. Corydalis brongniarti. (Hemeristina.)

Locality: Coalbrookdale, England. Horizon: Carboniferous.

1844.	Mantell.	Medals of creation, ii: 575, 578. *Lign.* 124, *fig.* 2.
1854.	"	Medals of creation, 2d ed., ii: 551, 554. *Lign.* 181, *fig.* 2.
1859.	Murchison.	Siluria, 3d ed., 320. *Foss.* 81, *fig.* 1 on *p.* 321.
1874.	Swinton.	Geol. mag., (2), i: 3–5.
1874.	"	Foss. orth., 3–5.

See also Lithosialis brongniarti, etc.

434. Corydaloides gracilis.

Locality: Commentry, France. Horizon: Carboniferous.

1885.	Brongniart.	Bull. soc. amis. sc. Rouen, (3), xxi: 64–65.
1885.	"	Rev. scient., (3), xxxvi: 278.
1885.	"	Geol. mag., (3), ii: 490.
1885.	"	Trans. geol. soc. Manch., xviii: 285.
1885.	"	Foss. ins. prim. rocks, 16.
1885.	"	Jahrb. geol. reichsanst., xxxv: 659.

435. Corydaloides scudderi.

Locality: Commentry, France. Horizon: Carboniferous.

1885.	Brongniart.	Bull. séances soc. ent. Fr., 1885: 13.
1885.	Scudder.	Mem. Bost. soc. nat. hist., iii: 350.
1885.	Brongniart.	La nature, ann. xiii, ii: 156. *Figs.* 1, 2.
1885.	"	Ins. foss. terr. prim., 64. *Pl.* [4], *fig.* 3.
1885.	"	Bull. soc. amis sc. Rouen, (3), xxi: 64–65.
1885.	"	Rev. scient., (3), xxxvi: 278.
1885.	"	Geol. mag., (3), ii: 490. *Pl.* 12, *fig.* 3.
1885.	"	Trans. geol. soc. Manch., xviii: 285. *Pl.*, *fig.* 3.
1885.	"	Foss. ins. prim. rocks, 16.
1885.	"	Jahrb. geol. reichsanst., xxxv: 659.
1886.	Brauer.	Ann. naturh. hofmus., i: 106–107.
1886.	———	Pop. sc. news, xx: 62. *Figs.* 1, 2.
1890.	Scudder.	Foss. ins. N. A., i: 314.

436. Dasyleptus lucasi. (Thysanura.)

Locality: Commentry, France. Horizon: Carboniferous.

1885.	Brongniart.	Bull. seances soc. ent. Fr., 1885: 101–102.
1885.	"	Bull. soc. amis sc. Rouen, (3), xxi: 58–59.
1885.	"	Rev. scient., (3), xxxvi: 276.
1885.	"	Geol. mag., (3), ii: 486.
1885.	"	Trans. geol. soc. Manch., xviii: 278.
1885.	"	Foss. ins. prim. rocks, 9–10.
1885.	"	Jahrb. geol. reichsanst., xxxv: 655.
1886.	Brauer.	Ann. naturh. hofmus., i: 88 (lukasii).
1890.	Brongniart.	Psyche, iv: 353.

Dasyleptus lukasii. See Dasyleptus lucasi.

437. Diaphanoptera ———.

Locality: Commentry, France. Horizon: Carboniferous.

1885.	Brongniart.	Bull. soc. amis sc. Rouen, (3), xxi: 66.

Dictyoneura spp. See I, ORTHOPT., Idem.

438. Dictyophlebia protogæa.

Locality: Malstatt, Germany. **Horizon:** Carboniferous.

1852. **Goldenberg.** Sitzungsb. math.-nat. cl. akad. wiss. Wien., ix: 39 (nudescr.).

439. Didymophleps contusa. (Homothetidæ)

Locality: Vermilion County, Ill. **Horizon:** Carboniferous.

1885. **Scudder.** Mem. Bost. soc. nat. hist., iii: 330–331. *Pl.* 29, ***fig.*** 6.
1885. “ Zittel, Handb. palaeont., i, th. ii: 760.
1886. “ Zittel-Barrois, Traité de paléont., ii: 759.
1886. “ Bull. U. S. geol. surv., No. 31: 42.
1886. **Brauer.** Ann. naturh. hofmus., i: 113.
1889. **Lesley.** Dict. foss. Penns., i: p. xx.
1889. **Miller.** N. A. geol. and pal., 576.
1890. **Scudder.** Foss. ins. N. A., i: 294–295. *Pl.* 15, *fig.* 6.

See also Termes contusus, Goldenbergia (Didymophleps) contusa, **Goldenbergia contusa.**

440. Dieconeura arcuata. (Palæopterina.)

Locality: Mazon Creek, Ill. **Horizon:** Carboniferous.

1885. **Scudder.** Mem. Bost. soc. nat. hist., iii: 336 *Pl.* 30, ***fig.*** 4.
1886. “ Bull. U. S. geol. surv., No. 31: 43.
1889. **Lesley.** Dict. foss. Penns., i: p. xx.
1889. **Miller.** N. A. geol. and pal., 576.
1890. **Scudder.** Foss. ins. N. A., i: 300. *Pl.* 16, ***fig.*** 4.

441. Dieconeura rigida. (Palæopterina.)

Locality: Pittston, Pa. **Horizon:** Carboniferous.

1885. **Scudder.** Mem. Bost. soc. nat. hist., iii: 336–337. *Pl.* 29, ***fig.*** 10.
1886. “ Bull. U. S. geol. surv., No. 31: 43.
1889. **Lesley.** Dict. foss. Penns., i: 202. *Fig.*
1889. **Miller.** N. A. geol. and pal., 576.
1890. **Scudder.** Foss. ins. N. A., i: 300–301. *Pl.* 15, *fig.* 10.

442. Dyscritus vetustus.

Locality: St. John, New Brunswick. **Horizon:** Devonian.

1865. **Scudder.** Dev. ins. N. Brunsw., 1 (unnamed).
1865. “ Bailey, Obs. geol. south. N. Brunsw., 140 (unnamed).
1865. “ Amer. journ. sc., (2), xxxix: 357 (unnamed).
1865. “ Can. nat., n. s., ii: 234 (unnamed).
1865. “ Trans. ent. soc. Lond., (3), ii: 117 (unnamed).
1868. “ Geol. mag., v: 172, 176.
1860. “ Dev. ins. N. Brunsw. (Anniv. mem. Bost. soc. nat. hist.), 20–22. *Pl.* 1, ***fig.*** 4.
1881. **Hagen.** Bull. mus. comp. zool., viii: 281.
1883. **Lacoe.** List pal. foss. ins., 6.
1885. **Brongniart.** Bull. soc. amis sc. Rouen, (3), xxi: 56.
1885. “ Geol. mag., (3), ii: 485.
1885. “ Trans. geol. soc. Manch., xviii: 276.
1885. “ Foss. ins. prim. rocks, 8.
1885. “ Jahrb. geol. reichsanst., xxxv: 653.
1886. **Brauer.** Ann. naturh. hofmus., i: 112.
1889. **Lesley.** Dict. foss. Penns., i: p. xx.
1889. **Miller.** N. A. geol. and pal., 576.
1890. **Scudder.** Foss. ins. N. A., i: 172–173. ***Pl.* 7, *fig.* 4.**

Encænus ovalis. See Eucænus ovalis.

443. Ephemerites affinis.

Locality: Morris, Ill. Horizon: Carboniferous.

1868.	Scudder.	Worth., Geol. surv. Ill., iii: 572 (Euphemerites). *Fig.* 10.
1885.	"	Mem. Bost. soc. nat. hist., iii: 350.
1889.	Miller.	N. A. geol. and pal., 576.
1890.	Scudder.	Foss. ins. N. A., i: 314.

(Probably not an insect.)

See also Euephemerites affinis.

444. Ephemerites gigas.

Locality: Morris, Ill. Horizon: Carboniferous.

1868.	Scudder.	Worth., Geol. surv. Ill., iii: 571–572 (Euphemerites). *Fig.* 9.
1885.	"	Mem. Bost. soc. nat. hist., iii: 350.
1889.	Miller.	N. A. geol. and pal., 576.
1890.	Scudder.	Foss. ins. N. A., i: 314.

(Probably not an insect.)

See also Euephemerites gigas.

445. Ephemerites rückerti. (Palephemeridæ.)

Locality: Reitsch near Stockheim, Germany. Horizon: Dyas.

1865.	Geinitz.	Neues jahrb. min., 1865: 385–389. *Pl.* 2, *fig.* 1.
1865.	Hagen.	Neues jahrb. min., 1865: 386–388.
1880.	Scudder.	Dev. ins. N. Brunsw., 31, note.
1885.	"	Mem. Bost. soc. nat. hist., iii: 324.
1885.	"	Zittel, Handb. palaeont., i, th. ii: 758.
1886.	"	Zittel-Barrois, Traité de paléont., ii: 758.
1886.	"	Bull. U. S. geol. surv., No. 31: 41.
1890.	"	Foss. ins. N. A., i: 183 note, 288.

446. Ephemerites simplex.

Locality: Morris, Ill. Horizon: Carboniferous.

1868.	Scudder.	Worth., Geol. surv. Ill., iii: 571 (Euphemerites). *Fig.* 8.
1885.	"	Mem. Bost. soc. nat. hist., iii: 350.
1889.	Miller.	N. A. geol. and pal., 576.
1890.	Scudder.	Foss. ins. N. A., i: 314

(Probably not an insect.)

See also Euephemerites simplex.

447. Eucænus ovalis. (Homothetidæ.)

Locality: Mazon Creek, Ill. Horizon: Carboniferous.

1885.	Scudder.	Mem. Bost. soc. nat. hist., iii: 325. *Pl.* 29, *fig.* 4.
1886.	"	Bull. U. S. geol. surv., No. 31: 42.
1889.	Lesley.	Dict. foss. Penns., i, p. xxiii.
1889.	Miller.	N. A. geol. and pal., 576 (Encænus).
1890.	Scudder.	Foss. ins. N. A., i: 289. *Pl.* 15, *fig.* 4.

448. Euephemerites affinis.

Locality: Illinois. Horizon: Carboniferous.

1883.	Lacoe.	List pal. foss. ins., 7.
1889.	"	Lesley, Dict. foss. Penns., i, p. xxiii.

(Probably not an insect.)

See also Ephemerites affinis.

449. Euephemerites gigas.

Locality: Illinois. Horizon: Carboniferous.

1883.	Lacoe.	List pal. foss. ins., 7.
1889.	"	Lesley, Dict. foss. Penns., i, p. xxiii.

(Probably not an insect.)

See also Ephemerites gigas.

450. Euephemerites primordialis.

Locality: Pennsylvania? Horizon: Carboniferous.

1878.	Scudder.	Proc. Bost. soc. nat. hist., xix: 248–249.
1878.	"	Entom. notes, vi: 37–38.
1883.	Lacoe.	List pal. foss. ins., 7.
1885.	Scudder.	Mem. Bost. soc. nat. hist., iii: 350.
1889.	Lacoe.	Lesley, Dict. foss. Penns., i, p. xxiii.
1890.	Scudder.	Foss. ins. N. A., i: 314.

(A plant.)

451. Euephemerites simplex.

Locality: Illinois. Horizon: Carboniferous.

1883.	Lacoe.	List pal. foss. ins., 7.
1889.	"	Lesley, Dict. foss. Penns., i, p. xxiii.

(Probably not an insect.)

See also Ephemerites simplex.

Euphemerites affinis. See Ephemerites affinis.

Euphemerites gigas. See Ephemerites gigas.

Euphemerites simplex. See Ephemerites simplex.

Eutermopsis spp. See I, ORTHOPT., Idem.

452. Genentomum validum. (Homothetidæ.)

Locality: Mazon Creek, Ill. Horizon: Carboniferous.

1885.	Scudder.	Mem. Bost. soc. nat. hist., iii: 329–330. *Pl.* 30, *figs.* 2, 3.
1885.	"	Zittel, Handb. palaeont., i, th. ii: 759. *Fig.* 945.
1886.	"	Zittel-Barrois, Traité de paléont., ii: 759. *Fig.* 961.
1886.	"	Bull. U. S. geol. surv., No. 31: 42.
1886.	Brauer.	Ann. naturh. hofmus., i: 113.
1889.	Lesley.	Dict. foss. Penns., i: 253, xxv. *Fig.*
1889.	Miller.	N. A. geol. and pal., 577. *Fig.* 1082.
1890.	Scudder.	Foss. ins. N. A., i: 293–294. *Pl.* 16, *figs.* 2, 3.

453. Genopteryx constricta. (Homothetidæ.)

Locality: Mazon Creek, Ill. Horizon: Carboniferous.

1885.	Scudder.	Mem. Bost. soc. nat. hist., iii: 327–328. *Pl.* 29, *fig.* 11.
1886.	"	Bull. U. S. geol. surv., No. 31: 42.
1889.	Lesley.	Dict. foss. Penns., i, p. xxv.
1889.	Miller.	N. A. geol. and pal., 577.
1890.	Scudder.	Foss. ins. N. A., i: 291–292. *Pl.* 15, *fig.* 11.

454. **Genopteryx lithanthraca.** (Homothetidæ.)

Locality: Saarbrück, Germany. Horizon: Carboniferous.

1885.	Scudder.	Mem. Bost. soc. nat. hist., iii: 328.
1885.	"	Zittel, Handb. palaeont., i. th. ii: 759. *Fig.* 944.
1886.	"	Zittel-Barrois, Traité de paléont., ii: 759. *Fig.* 960.
1886.	"	Bull. U. S. geol. surv., No. 31: 42.
1886.	Brauer.	Ann. naturh. hofmus., i: 113.
1890.	Scudder.	Foss. ins. N. A., i: 292.

See also Gryllacris lithanthraca, etc.

Gerapompus blatinoides. See Gerapompus blattinoides.

455. **Gerapompus blattinoides.** (Homothetidæ.)

Locality: Mazon Creek, Ill. Horizon: Carboniferous.

1885.	Scudder.	Mem. Bost. soc. nat. hist., iii: 326. *Pl.* 29, *fig.* 1.
1886.	"	Bull. U. S. geol. surv., No. 31: 42.
1889.	Miller.	N. A. geol. and pal., 577 (blatinoides).
1890.	Scudder.	Foss. ins. N. A., i: 290. *Pl.* 15, *fig.* 1.

456. **Gerapompus extensus.** (Homothetidæ.)

Locality: Mazon Creek, Ill. Horizon: Carboniferous.

1885.	Scudder.	Mem. Bost. soc. nat. hist., iii: 326. *Pl.* 29, *figs.* 5, 8.
1886.	"	Bull. U. S. geol. surv., No. 31: 42.
1889.	Miller.	N. A. geol. and pal., 577.
1890.	Scudder.	Foss. ins. N. A., i: 290. *Pl.* 15, *figs.* 5, 8.

457. **Gerarus?** ———. (Gerarina.)

Locality: Mazon Creek, Ill. Horizon: Carboniferous.

1885.	Scudder.	Mem. Bost. soc. nat. hist., iii: 344. *Pl.* 32, *fig.* 3.
1890.	"	Foss. ins. N. A., i: 308. *Pl.* 18, *fig.* 3.

458. **Gerarus?** ———. (Gerarina.)

Locality: Mazon Creek, Ill. Horizon: Carboniferous.

1885.	"	Mem. Bost soc. nat. hist., iii: 345. *Pl.* 32, *fig.* 5.
1890.	"	Foss. ins. N. A., i: 309. *Pl.* 18, *fig.* 5.

459. **Gerarus danæ.** (Gerarina.)

Locality: Mazon Creek, Ill. Horizon: Carboniferous.

1885.	Scudder.	Mem. Bost. soc. nat. hist., iii: 345. *Pl.* 31, *fig.* 5.
1885.	"	Zittel, Handb. palaeont., i, th. ii: 762. *Fig.* 953.
1886.	"	Zittel-Barrois, Traité de paléont., ii: 762. *Fig.* 969.
1886.	"	Bull. U. S. geol. surv., No. 31: 44.
1889.	Miller.	N. A. geol. and pal., 577. *Fig.* 1084.
1890.	Scudder.	Foss. ins. N. A., i: 309. *Pl.* 17, *fig.* 5.

See also Miamia danæ, Chrestotes danæ.

460. **Gerarus mazonus.** (Gerarina.)

Locality: Mazon Creek, Ill. Horizon: Carboniferous.

1885.	Scudder.	Mem. Bost. soc. nat. hist., iii: 344–345. *Pl.* 32, *fig.* 7.
1886.	"	Bull. U. S. geol. surv., No. 31: 44.
1889.	Miller.	N. A. geol. and pal., 577.
1890.	Scudder.	Foss. ins. N. A., i: 308–309. *Pl.* 18, *fig.* 7.

461. Gerarus vetus. (Gerarina.)

Locality: Mazon Creek, Ill. Horizon: Carboniferous.

1885. **Scudder.** Mem. Bost. soc. nat. hist., iii: 344. *Pl.* 31, *fig.* 6.
1886. " Bull. U. S. geol. surv., No. 31: 44.
1889. **Miller.** N. A. geol. and pal., 577.
1890. **Scudder.** Foss. ins. N. A., i: 308. *Pl.* 17, *fig.* 6.

Gerephemera simplex. See I, ORTHOPT., Idem.

462. Geroneura wilsoni,

Locality: Lancaster, N. B. Horizon: Cordaite shales, Lower Devonian.

1889. **Matthew.** Trans. roy. soc. Can., 1888, iv: 57–59. *Pl.* 4, *fig.* 10.
1889. **Miller.** N. A. geol. and pal., 577.

Goldenbergia spp. See I, ORTHOPT., Idem.

463. Goldenbergia contusa.

Locality: Illinois. Horizon: Carboniferous.

1885. **Brongniart.** Bull. soc. amis sc. Rouen, (3), xxi: 61.
1885. " Geol. mag., (3), ii: 488.
1885. " Trans. geol. soc. Manch., xviii: 281.
1885. " Foss. ins. prim. rocks, 13.
1885. " Jahrb. geol. reichsanst., xxxv: 657.

See also Didymophleps contusa, etc.

464. Goldenbergia (Didymophleps) contusa.

Locality: Illinois. Horizon: Carboniferous.

1886. **Brauer.** Ann. naturh. hofmus., i: 114.

See also Didymophleps contusa, etc.

465. Gryllacris bohemica.

Locality: Stradonitz, Bohemia. Horizon: Carboniferous.

1880. **Novák.** Jahrb. geol. reichsanst., xxx: 69–74. *Pl.* 2, *fig.* 1–3.
1884. **Kusta.** Vesmír, xiii: 97–98. *Fig.* 1.

See also Lithosialis bohemica.

466. Gryllacris brongniarti. (Hemeristina.)

Locality: England. Horizon: Carboniferous.

1880. **Novák.** Jahrb. geol. reichsanst., xxx: 73–74. *Pl.* 2, *fig.* 4.

See also Lithosialis brongniarti, etc.

467. Gryllacris (Corydalis) brongniarti. (Hemeristina.)

Locality: England. Horizon: Carboniferous.

1874. **Swinton.** Geol. mag., (2), i: 5. *Pl.* 14, *fig.* 3.
1874. " Foss. orth., 5. *Pl.*, *fig.* 3.
1876. **Woodward.** Quart. journ. geol. soc. Lond., xxxii: 60. *Pl.* 9, *fig.* 2.

See also Lithosialis brongniarti, etc.

468. Gryllacris lithanthraca. (Homothetidæ.)

Localities: Russhütte, Fischbach bei Saarbrück, Germany. Horizon: Carboniferous.

1852. **Goldenberg.** Sitzungsb. math.-nat. cl. akad. wiss. Wien, ix: 39 (undescr.).

1854.	**Goldenberg.**	Palaeontogr., iv: 24–27. *Pl.* 4, *figs.* 1, 2.
1854.	"	Foss. ins. Saarbr., 8–11. *Pl.* 2, *figs.* 1, 2.
1865.	Lyell.	Elem. geol., 6th ed., 491. *Fig.* 549.
1876.	Goldenberg.	Vorweltl. fauna steink. Saarbr., 20. *Pl.* 2, *fig.* 17 (ined.).
1873.	"	Fauna saræp. foss, i: 20. *Pl.* 2, *fig.* 17.
1877.	"	Fauna saræp. foss., ii: 51.

See also Prototettix lithanthraca, Genopteryx lithanthraca, Lithophasma lithanthraca.

469. **Hemeristia occidentalis.** (Hemeristina.)

Locality: Morris, Ill. Horizon: Carboniferous.

1864.	Dana.	Amer. journ. sc., (2), xxxvii: 35. *Fig.* 2.
1865.	Scudder.	Amer. journ. sc., (2), xl: 269–271.
1865.	"	Proc. Bost. soc. nat. hist., x: 96.
1866.	"	Mem. Bost. soc. nat. hist., i: 191–192. *Pl.* 6, *figs.* 1, 3.
1866.	"	Zool. relat. foss. neur. ins., 19–20. *Pl.*, *figs.* 1, 3.
1868.	"	Geol. mag., v: 217–218.
1876.	Gerstäcker.	Klass. ordn. arthr., Crust., i: 292 (an ephemerid).
1877.	Goldenberg.	Fauna saræp. foss., ii: 15–16 (Hemeristica).
1883.	Lacoe.	List pal. foss. ins., 9.
1885.	Scudder.	Mem. Bost. soc. nat. hist., iii: 342.
1885.	Brongniart.	Bull. soc. amis. sc. Rouen, (3), xxi: 66.
1885.	"	Geol. mag., (3), ii: 491.
1885.	"	Trans. geol. soc. Manch., xviii: 287.
1885.	"	Foss. ins. prim. rocks, 18.
1885.	"	Jahrb. geol. reichsanst., xxxv: 660.
1885.	Scudder.	Zittel, Handb. paleont., i, th. ii: 762.
1886.	"	Zittel-Barrois, Traité de paléont., ii: 762.
1886.	"	Bull. U. S. geol. surv., No. 31: 44.
1886.	Brauer.	Ann. naturh. hofmus., i: 113. *Pl.* 8, *fig.* 17.
1889.	Miller.	N. A. geol. and pal., 578.
1890.	Scudder.	Foss. ins. N. A., i: 19–20, 306. *Pl.* 1, *figs.* 1, 3.

Hemeristica occidentalis. See Hemeristia occidentalis.

470. **Homaloneura elegans.**

Locality: Commentry, France. Horizon: Carboniferous.

1885.	Brongniart.	Bull. soc. amis sc. Rouen, (3), xxi: 66. *Pl.* 3, *fig.* 2.
1886.	Brauer.	Ann. naturh. hofmus., i: 108–109.

471. **Homothetus fossilis.** (Homothetidæ.)

Locality: St. John, New Brunswick. Horizon: Devonian.

1865.	Scudder.	Dev. ins. N. Brunsw., 1 (unnamed).
1865.	"	Bailey, Obs. geol. south. N. Brunsw., 140 (unnamed).
1865.	"	Amer. journ. sc., (2), xxxix: 357 (unnamed).
1865.	"	Can. nat., n. s., ii: 235 (unnamed).
1865.	"	Trans. ent. soc. Lond., (3), ii: 117 (unnamed).
1867.	"	Can. nat., (2), iii: 205. *Pl.* 3.
1867.	"	Geol. mag., iv: 387. *Pl.* 17, *fig.* 3.
1868.	"	Dawson, Acad. geol., 2d ed., 524–525. *Fig.* 182.
1868.	"	Amer. nat., i: 631. *Pl.* 16, *fig.* 7.
1868.	"	Geol. mag., v: 172, 176.
1872.	Packard.	Guide ins., 3d ed., 78. *Pl.* 1, *fig.* 7.
1880.	Scudder.	Dev. ins. N. Brunsw. (Anniv. mem. Bost. soc. nat. hist.), 17–20. *Pl.* 1, *figs.* 1, 2.

1880.	Dawson.	Chain of life, 140. *Fig.* 123*b*.
1881.	Hagen.	Bull. mus. comp. zool., viii: 278–279.
1883.	Lacoe.	List pal. foss. ins., 9.
1885.	Scudder.	Mem. Bost. soc. nat. hist., iii: 331.
1885.	“	Earl. winged ins. Amer., 5–6. *Pl.*, *fig.* 1; *fig.* on *p.* 5.
1885.	Brongniart.	Bull. soc. amis sc. Rouen, (3), xxi: 56.
1885.	“	Geol. mag., (3), ii: 485.
1885.	“	Trans. geol. soc. Manch., xviii: 276.
1885.	“	Foss. ins. prim. rocks, 8.
1885.	“	Jahrb. geol. reichsanst., xxxv: 653.
1885.	Hagen.	Nature, xxxii: 54.
1885.	“	Dev. ins., 2.
1885.	“	Zool. anz., viii: 297.
1885.	Scudder.	Zittel, Handb. palaeont., i, th. ii: 760. *Fig.* 946.
1886.	“	Zittel-Barrois, Traité de paléont., ii: 759. *Fig.* 962.
1886.	“	Bull. U. S. geol. surv., No. 31: 42.
1886.	Brauer.	Ann. naturh. hofmus., i: 111–112.
1889.	Miller.	N. A. geol. and pal., 578. *Fig.* 1087.
1890.	Scudder.	Foss. ins. N. A., i: 169–172, 279–280, 295. *Pl.* 7, *figs.* 1, 2; *pl.* 14, *fig.* 1; *fig.* on *p.* 279.

472. Lamproptilia elegans.

Locality: Commentry, France. Horizon: Carboniferous.

1885.	Brongniart.	Bull. soc. amis sc. Rouen, (3), xxi: 63.
1885.	“	Geol. mag., (3), ii: 489.
1885.	“	Trans. geol. soc. Manch., xviii: 283.
1885.	“	Foss. ins. prim. rocks, 15.
1885.	“	Jahrb. geol. reichsanst., xxxv: 658.

473. Lamproptilia grand'euryi.

Locality: Commentry, France. Horizon: Carboniferous.

1885.	Brongniart.	Bull. soc. amis sc. Rouen, (3), xxi: 63. *Pl.* 3, *fig.* 1.
1885.	“	Rev. scient., (3), xxxvi: 277. *Fig.* 4.
1885.	“	Geol. mag., (3), ii: 489.
1885.	“	Trans. geol. soc. Manch., xviii: 283. *Fig.*
1885.	“	Foss. ins. prim. rocks, 15.
1885.	“	Jahrb. geol. reichsanst., xxxv: 658.
1886.	Brauer.	Ann. naturh. hofmus., i: 109–110. *Pl.* 8, *fig.* 14.

474. Lamproptilia priscotincta.

Locality: Commentry, France. Horizon: Carboniferous.

1885.	Brongniart.	Bull. soc. amis sc. Rouen, (3), xxi: 63.
1885.	“	Geol. mag., (3), ii: 489.
1885.	“	Trans. geol. soc. Manch., xviii: 283.
1885.	“	Foss. ins. prim. rocks, 15.
1885.	“	Jahrb. geol. reichsanst., xxxv: 658.

475. Leptoneura ———.

Locality: Commentry, France. Horizon: Carboniferous.

1885.	Brongniart.	Ins. foss. terr. prim. *Pl.* [5], *fig.* 3.
1886.	Brauer.	Ann. naturh. hofmus., i: 110.

476. Leptoneura delicatula.

Locality: Commentry, France. Horizon: Carboniferous

1885.	Brongniart.	Bull. soc. amis sc. Rouen, (3), xxi: 62.
1885.	"	Geol. mag., (3), ii: 488.
1885.	"	Trans. geol. soc. Manch., xviii: 282.
1885.	"	Foss. ins. prim. rocks, 14.
1885.	"	Jahrb. geol. reichsanst., xxxv: 657.

477. Leptoneura elongata.

Locality: Commentry, France. Horizon: Carboniferous.

1885.	Brongniart.	Bull. soc. amis sc. Rouen, (3), xxi: 62.
1885.	"	Geol. mag., (3), ii: 488.
1885.	"	Trans. geol. soc. Manch., xviii: 282.
1885.	"	Foss. ins. prim. rocks, 14.
1885.	"	Jahrb. geol. reichsanst., xxxv: 657.

478. Leptoneura oustaleti.

Locality: Commentry, France. Horizon: Carboniferous.

1885.	Brongniart.	Ins. foss. terr. prim., 62. *Pl.* [5], *fig.* 4.
1885.	"	Bull. soc. amis sc. Rouen, (3), xxi: 62.
1885.	"	Geol. mag., (3), ii: 488.
1885.	"	Trans. geol. soc. Manch., xviii: 282.
1885.	"	Foss. ins. prim. rocks, 14.
1885.	"	Jahrb. geol. reichsanst., xxxv: 657.
1886.	Brauer.	Ann. naturh. hofmus., i: 110.

479. Leptoneura robusta.

Locality: Commentry, France. Horizon: Carboniferous.

1885.	Brongniart.	Bull. soc. amis sc. Rouen, (3), xxi: 62.
1885.	"	Geol. mag., (3), ii: 488.
1885.	"	Trans. geol. soc. Manch., xviii: 282.
1885.	"	Foss. ins. prim. rocks, 14.
1885.	"	Jahrb. geol. reichsanst., xxxv: 657.

Libellula carbonaria. See I, ARACHNIDA, Ibid.

Lithentomum hartii. See Lithentomum harttii.

480. Lithentomum harttii. (Hemeristina.)

Locality: St. John, N. B. Horizon: Devonian.

1865.	Scudder.	Dev. ins. N. Brunsw., 1 (unnamed).
1865.	"	Bailey, Obs. geol. south. N. Brunsw., 140 (unnamed).
1865.	"	Amer. journ. sc., (2), xxxix: 357 (unnamed).
1865.	"	Can. nat., n. s., ii: 235 (unnamed).
1865.	"	Trans. ent. soc. Lond., (3), ii: 117 (unnamed).
1867.	"	Can nat., (2), iii: 206. *Pl.* 4.
1867.	"	Geol. mag., iv: 387. *Pl.* 17, *fig.* 4.
1868.	"	Dawson, Acad. geol., 2d ed., 525. *Fig.* 183.
1868.	"	Amer. nat., i: 630 (hartii). *Pl.* 16, *fig.* 5.
1868.	"	Geol. mag., v: 172, 176.
1872.	Packard.	Guide ins., 3d ed., 78 (hartii). *Pl.* 1, *fig.* 5.
1880.	Scudder.	Dev. ins. N. Brunsw. (Anniv. mem. Bost. soc. nat. hist.), 22-24. *Pl.* 1, *fig.* 3.
1880.	Dawson.	Chain of life, 140. *Fig.* 123c.

1881.	**Hagen.**	Bull. mus. comp. zool., viii: 278.
1883.	**Lacoe.**	List pal. foss. ins., 10.
1885.	**Scudder.**	Earl. winged ins. Amer., 4. *Pl.*, *figs.* 2, 3.
1885.	“	Mem. Bost. soc. nat. hist., iii: 341.
1885.	**Brongniart.**	Bull. soc. amis sc. Rouen, (3), xxi: 56.
1885.	“	Geol. mag., (3), ii: 485.
1885.	“	Trans. geol. soc. Manch., xviii: 275–276.
1885.	“	Foss. ins. prim. rocks, 7.
1885.	“	Jahrb. geol. reichsanst., xxxv: 653.
1885.	**Scudder.**	Zittel, Handb. palaeont., i, th. ii: 761.
1886.	“	Zittel-Barrois, Traité de paléont., ii: 761.
1886.	“	Bull. U. S. geol. surv., No. 31: 44.
1886.	**Brauer.**	Ann. naturh. hofmus., i: 111, 114.
1889.	**Lesley.**	Dict. foss. Penns., i: 351.
1889.	**Miller.**	N. A. geol. and pal., 578–579. *Fig.* 1088.
1890.	**Scudder.**	Foss. ins. N. A., i: 174–175, 278, 305. *Pl.* 7, *fig.* 3; *Pl.* 14, *figs.* 2, 3.

481. Lithomantis carbonaria. (Hemeristina.)

Compared with Blepharis domina, Abyssinia.

Locality: Scotland. Horizon: Carboniferous.

1876.	**Woodward.**	Quart. journ. geol. soc. Lond., xxxii: 60–64 (carbonarius). *Pl.* 9, *fig.* 1.
1879.	**Scudder.**	Mem. Bost. soc. nat. hist., iii: 18 note 2 (Archimantis).
1880.	“	Arch. sc. phys. nat., (3), iii: 363.
1881.	“	Geol. mag., (2), viii: 296–300.
1881.	“	Harv. univ. bull., ii: 175.
1883.	“	Mem. Bost. soc. nat. hist., iii: 219, 220, 223.
1885.	“	Mem. Bost. soc. nat. hist., iii: 340.
1885.	“	Zittel, Handb. palaeont., i, th. ii: 761. *Fig.* 950.
1886.	“	Zittel-Barrois, Traité de paléont., ii: 761. *Fig.* 966.
1886.	“	Bull. U. S. geol. surv., No. 31: 44.
1886.	**Brauer.**	Ann. naturh. hofmus., i: 113.
1890.	**Scudder.**	Foss. ins. N. A., i: 38 note, 241, 242, 245, 304.

482. Lithophasma lithanthraca. (Homothetidæ.)

Locality: Saarbrück, Germany. Horizon: **Carboniferous.**

1885.	**Brongniart.**	Bull. soc. amis sc. Rouen, (3), xxi: 59.
1885.	“	Geol. mag., (3), ii: 487 (lithantraca).
1885.	“	Trans. geol. soc. Manch., xviii: 279.
1885.	“	Foss. ins. prim. rocks, 11.
1885.	“	Jahrb. geol. reichsanst., xxxv: 656.

See also Gryllacris lithanthraca, etc.

Lithophasma lithantraca. See Lithophasma lithanthraca.

483. Lithosialis bohemica. (Hemeristina.)

Locality: Bohemia. Horizon: Carboniferous.

1881.	**Scudder.**	Proc. Bost. soc. nat. hist., xxi: 167.
1881.	“	Harv. univ. bull., ii: 175.
1885.	“	Mem. Bost. soc. nat. hist., iii: 341.
1885.	“	Zittel, Handb. palaeont., i, th. ii: 761.
1886.	“	Zittel-Barrois, Traité de paléont., ii: 761.
1886.	“	Bull. U. S. geol. surv., No. 31: 44.
1890.	“	Foss. ins. N. A., i: 304.

See also Gryllacris bohemica.

484. Lithosialis brongniarti. (Hemeristina.)

Locality: Coalbrookdale, Shropshire, England. Horizon: Carboniferous.

1881.	Scudder.	*Proc. Bost. soc. nat. hist., xxi: 167.
1881.	“	Harv. univ. bull., ii: 175.
1881.	“	Geol. mag., (2), viii: 296–300.
1883.	“	Mem. Bost. soc. nat hist., iii: 220–223. *Pl.* 17, *fig.* 1, 2, 8, 9.
1885.	“	Mem. Bost. soc. nat. hist., iii: 340.
1885.	“	Zittel, Handb. palaeont., i, th. ii: 761, 822.
1886.	“	Zittel-Barrois, Traité de paléont., ii: 761, 824.
1886.	“	Bull. U. S. geol. surv., No. 31: 44, 104.
1890.	“	Foss. ins. N. A., i: 242–245, 304. *Pl.* 11, *figs.* 1, 2, 8, 9.

See also Corydalis —— Aud., Corydalis brongniarti, Gryllacris brongniarti, Gryllacris (Corydalis) brongniarti, Protogryllacris brongniarti, Mantispa —— Keferst.

485. Lithosialis carbonaria. (Hemeristina.)

Locality: Wettin, Saxony. Horizon: Carboniferous.

1885.	Scudder.	Mem. Bost. soc. nat. hist., iii: 340.
1885.	“	Zittel, Handb. palaeont., i, th. ii: 761.
1886.	“	Zittel-Barrois, Traité de paléont., ii: 761.
1886.	“	Bull. U. S. geol. surv., No. 31: 44.
1890.	“	Foss. ins. N. A., i: 304.

See also Blattina carbonaria, etc.

486. Mantispa ——.

Locality: Colebrook, England. Horizon: Carboniferous.

1834.	Keferstein.	Naturg. erdkörp., ii: 338. (Very probably Lithosialis brongniarti.)

See also Lithosialis brongniarti.

Meganthentomum formosum. See Megathentomum formosum.

487. Megathentomum carbonatum.

Locality: Germany. Horizon: Carboniferous.

1885.	Brongniart.	Bull. soc. amis sc. Rouen, (3), xxi: 60 (referring to “Acridites carbonatus Gold.,” but there is no such insect described; possibly he refers to A. carbonarius Germ.).
1885.	Brongniart.	Geol. mag., (3), ii: 487.
1885.	“	Trans. geol. soc. Manch., xviii: 280.
1885.	“	Foss. ins. prim. rocks, 12.
1885.	“	Jahrb. geol. reichsanst., xxxv: 656.

See also Acridites carbonarius.

488. Megathentomum formosum. (Gerarina.)

Locality: Saarbrück, Germany. Horizon: Carboniferous.

1876.	Scudder.	Proc. Bost. soc. nat. hist., xviii: 359.
1885.	“	Mem. Bost. soc. nat. hist., iii: 347 (Meganthentomum.)
1885.	Brongniart.	Bull. soc. amis sc. Rouen, (3), xxi: 60.
1885.	“	Geol. mag., (3), ii: 487.
1885.	“	Trans. geol. soc. Manch., xviii: 280.
1885.	“	Foss. ins. prim. rocks, 12.
1885.	“	Jahrb. geol. reichsanst., xxxv: 656.
1890.	Scudder.	Foss. ins. N. A., i: 311.

See also Acridites formosus.

489. Megathentomum pustulatum. (Gerarina.)

Locality: Morris, Ill. Horizon: Carboniferous.

1868.	Scudder.	Proc. Bost. soc. nat. hist., xi: 401–402.
1868.	"	Ent. notes, i: 7–8.
1868.	"	Worth., Geol. surv. Ill., iii: 570. *Fig.* 7.
1872.	Packard.	Guide ins., 3d ed., 621. *Fig.* 617.
1876.	Scudder.	Proc. Bost. soc. nat. hist., xviii: 359.
1883.	Lacoe.	List pal. foss. ins., 11.
1885.	Scudder.	Mem. Bost. soc. nat. hist., iii: 346–347. *Pl.* 32, *figs.* 1, 9, 10.
1885.	Brongniart.	Bull. soc. amis sc. Rouen, (3), xxi: 60.
1885.	"	Geol. mag., (3), ii: 487.
1885.	"	Trans. geol. soc. Manch., xviii: 280.
1885.	"	Foss. ins. prim. rocks, 11–12.
1885.	"	Jahrb. geol. reichsanst., xxxv: 656.
1885.	Scudder.	Zittel, Handb. palaeont., i, th. ii: 762. *Fig.* 954.
1886.	"	Zittel-Barrois, Traité de paléont., ii: 762. *Fig.* 970.
1886.	"	Bull. U. S. geol. surv., No. 31: 45.
1886.	Brauer.	Ann. naturh. hofmus., i: 114.
1889.	Lesley.	Dict. foss. Penns., i: 389. *Fig.*
1889.	Miller.	N. A. geol. and pal., 579. *Fig.* 1090.
1890.	Scudder.	Foss. ins. N. A., i: 310–311. *Pl.* 18, *figs.* 1, 9, 10.

490. Miamia bronsoni. (Palæopterina.)

Locality: Morris, Ill. Horizon: Carboniferous.

1864.	Dana.	Amer. journ. sc., (2), xxxvii: 34–35. *Fig.* 1.
1865.	Scudder.	Amer. journ. sc., (2), xl: 269–271.
1865.	"	Proc. Bost. soc. nat. hist., x: 96.
1866.	"	Mem. Bost. soc. nat. hist., i: 190. *Pl.* 6, *figs.* 2, 4.
1866.	"	Zool. relat. foss. neur. ins., 18. *Pl.*, *figs.* 2, 4.
1868.	"	Amer. nat., i: 630. *Pl.* 16, *fig.* 1.
1868.	"	Geol. mag., v: 217–218.
1872.	Packard.	Guide ins., 3d ed., 78. *Pl.* 1, *fig.* 1.
1874.	Dana.	Man. geol., 2d ed., 343. *Fig.* 669 on *p.* 335.
1876.	Gerstäcker.	Klass. ordn. arthr., Crust., i: 292 (a Perlarian).
1877.	Goldenberg.	Fauna saræp. foss., ii: 14–15.
1883.	Lacoe.	List pal. foss. ins., 11.
1885.	Scudder.	Mem. Bost. soc. nat. hist., iii: 333.
1885.	Brongniart.	Bull. soc. amis sc. Rouen, (3), xxi: 62.
1885.	"	Geol. mag., (3), ii: 485.
1885.	"	Trans. geol. soc. Manch., xviii: 282.
1885.	"	Foss. ins. prim. rocks, 14.
1885.	"	Jahrb. geol. reichsanst., xxxv: 657.
1885.	Scudder.	Zittel, Handb. palaeont., i, th. ii: 760.
1886.	"	Zittel-Barrois, Traité de paléont., ii: 760.
1886.	"	Bull. U. S. geol. surv., No. 31: 43.
1886.	Brauer.	Ann. naturh. hofmus., i: 113.
1889.	Lesley.	Dict. foss. Penns., i: 402.
1889.	Miller.	N. A. geol. and pal., 579.
1890.	Scudder.	Foss. ins. N. A., i: 18, 297. *Pl.* [1], *figs.* 2, 4.

491. Miamia danæ. (Gerarina.)

Locality: Mazon Creek, Ill. Horizon: Carboniferous.

1868.	Scudder.	Worth., Geol. surv. Ill., iii: 566. *Fig.* 1.
1883.	Lacoe.	List pal. foss. ins., 11.
1874.	Dana.	Man. geol., 2d ed., 343. *Fig.* 670 on *p.* 335.

See also Gerarus danæ, Chrestotes danæ.

492. Mixotermes lugauensis. (Homothetidæ.)

Locality: Lugau, Saxony. Horizon: Carboniferous.

1885. Scudder. Mem. Bost. soc. nat. hist., iii: 331.
1885. " Zittel, Handb. palaeont., i, th. ii: 760.
1886. " Zittel-Barrois, Traité de paléont., ii: 760.
1886. " Bull. U. S. geol. surv., No. 31: 42.
1890. " Foss. ins. N. A., i: 295.

See also Termes (Mixotermes) lugauensis, Chrestotes lugauensis.

493. Omalia macroptera. (Homothetidæ.)

Locality: Sars Longchamps, Belgium. Horizon: Carboniferous.

1867. Bened.-Coem. Bull. acad. roy. Belg., (2), xxiii, iv: 384-401. *Pl., fig.* [5.]
1867. " Ins. et gast. terr. houill., 11–20. *Pl., fig.* [5.]
1867. " Ann. sc. nat., (5), zool., vii: 271–276. *Pl.* 1, *fig.* 10.
1877. Goldenberg. Fauna saræp. foss., ii: 16, 50.
1885. Scudder. Mem. Bost. soc. nat. hist., iii: 331.
1885. Brongniart. Bull. soc. amis sc. Rouen, (3), xxi: 66.
1885. " Geol. mag., (3), ii: 491.
1885. " Trans. geol. soc. Manch., xviii: 287.
1885. " Foss. ins. prim. rocks, 18.
1885. Scudder. Zittel, Handb. palaeont., i, th. ii: 760.
1886. " Zittel-Barrois, Traité de paléont., ii: 760.
1886. " Bull. U. S. geol. surv., No. 31: 42.
1890. " Foss. ins. N. A., i: 295.

494. Oustaletia ———.

Locality: Commentry, France. Horizon: Carboniferous.

1885. Brongniart. Bull. soc. amis sc. Rouen, (3), xxi: 66.

Pachytylopsis borinensis. See I, ORTHOPT., Idem.

495. Pachytylopsis persenairei. (Hemeristina.)

Locality: Mons, Belgium. Horizon: Carboniferous.

1875. Borre. Compt. rend. soc. ent. Belg., (2), xii: 6–7.
1875. " Ann. soc. ent. Belg., xviii: 5–6. *Pl.* 5, *fig.* 1.
1875. " Empr. d'ins. foss., 5–6. *Pl.* 5, *fig.* 1.
1875. Giard. Bull. sc. hist. litt. dép. Nord, vii: 121–122.
1876. Van Volxem. Compt. rend. soc. ent. Belg., (2), xxiv: 20–26.
1876. " Note crit. sur Pach., 1–7.
1885. Scudder. Mem. Bost. soc. nat. hist., iii: 341. *Pl.* 31, *fig.* 7.
1885. Brongniart. Bull. soc. amis sc. Rouen, (3), xxi: 66.
1885. " Geol. mag., (3), ii: 491.
1885. " Trans. geol. soc. Manch., xviii: 287.
1885. " Foss. ins. prim. rocks, 18.
1885. Scudder. Zittel, Handb. palaeont., i, th. ii: 761.
1886. " Zittel-Barrois, Traité de paléont., ii: 761.
1886. " Bull. U. S. geol. surv., No. 31: 44.
1886. Brauer. Ann. naturh. hofmus., i: 113–114.
1890. Scudder. Foss. ins. N. A., i: 305. *Pl.* 17, *fig.* [illegible].

496. Palæoblattina douvillei.

Locality: Jurques, France. Horizon: Middle Silurian.

1885. Brongniart. Compt. rend., xcix: 1164–1165.
1885. " Bull. séances soc. ent. Fr., 1884: 236–237.
1885. " La nature, xiii: 116. *Figs.* 1, 2.

1885.	Brongniart.	Bull. soc. amis sc. Rouen, (3), xxi : 55. *Pl.* 3, *figs.* 4, 5.
1885.	"	Geol. mag., (3), ii : 484.
1885.	"	Trans. geol. soc. Manch., xviii : 274.
1885.	"	Foss. ins. prim. rocks, 6.
1885.	"	Jahrb. geol. reichsanst., xxxv : 652.
1885.	Goss.	Ent. monthl. mag., xxi : 200.
1885.	Scudder.	Mem. Bost. soc. nat. hist., iii : 322 (without name).
1885.	"	Zittel, Handb. palaeont., i, th. ii : 753, 820. *Fig.* 929.
1886.	"	Zittel-Barrois, Traité de paléont., ii : 752, 823. *Fig.* 946.
1886.	"	Bull. U. S. geol. surv., No. 31 : 46, 103.
1886.	"	Miall, Cockroach, 213.
1886.	Brauer.	Ann. naturh. hofmus., i : 97, 104. *Pl.* 8, *fig.* 20.
1888.	Vidal.	Ins. y plantas, 8.
1890.	Lesley.	Dict. foss. Penns., ii : 578. *Fig.*
1890.	Scudder.	Foss. ins. N. A., i : 286 (without name).

Palephemera antiqua. See Platephemera antiqua.

497. **Palingenia feistmanteli.** (Palephemeridæ.)

Compared with P. longicauda.

Locality : Votvovic, Bohemia. Horizon : Carboniferous.

1880.	Fritsch.	Vesmír, ix : 241–242. *Figs. A, B.*
1882.	"	Mojs., Beitr. palaeont. Oesterr.-Ung., ii : 1–3. *Pl.* 1, *figs.* 1–6.
1882.	"	Foss. arthr. steink. u. kreidef. Böhmens, 1–3. *Pl.* 1, *figs.* 1–6.
1884.	Kušta.	Vesmír, xiii : 98.
1885.	Scudder.	Mem. Bost. soc. nat. hist., iii : 324.
1885.	"	Zittel, Handb. palaeont., i, th. ii : 758.
1886.	"	Zittel-Barrois, Traité de paléont., ii : 758.
1886.	"	Bull. U. S. geol. surv., No. 31 : 41.
1886.	Brauer.	Ann. naturh. hofmus., i : 113.
1889.	Brongniart.	Ann. géol. univ., v : 1023.
1890.	Scudder.	Foss. ins. N. A., i : 288.

498. **Petrablattina subtilis.** (Palæopterina.)

Locality : Schiffweiler, Germany. Horizon : Carboniferous.

1883.	Kliver.	Neue blatt. Saarbr., 6–7 (Petroblattina.) *Pl.* 2, *figs.* 1, 1*a*.
1883.	"	Palaeontogr., xxix : 254–255. *Pl.* 35, *figs.* 1, 1*a*.

See also Strephocladus subtilis.

Petroblattina subtilis. See Petrablattina subtilis.

499. **Pictetia** ———.

Locality : Commentry, France. Horizon : Carboniferous.

1885.	Brongniart.	Bull. soc. amis sc. Rouen, (3), xxi : 66.

500. **Platephemera antiqua.** (Palephemeridæ.)

Locality : St. John, N. B. Horizon : Devonian.

1865.	Scudder.	Dev. ins. N. Brunsw., 1 (unnamed).
1865.	"	Bailey, Obs. geol. south. N. Brunsw., 140 (unnamed).
1865.	"	Amer. journ. sc., (2), xxxix : 357 (unnamed).
1865.	"	Can. nat., ii : 235 (unnamed).
1865.	"	Trans. ent. soc. Lond., (3), ii : 117 (unnamed).
1867.	"	Can. nat., n. s., iii : 205. *Fig.* 2.
1867.	"	Geol. mag., iv : 387. *Pl.* 17, *fig.* 2.
1868.	"	Dawson, Acad. geol., 2d ed., 524. *Fig.* 181.

1868.	Scudder.	Amer. nat., i: 630. *Pl.* 16, *fig.* 3.
1868.	"	Geol. mag., v: 173, 175–176.
1872.	Packard.	Guide ins., 3d ed., 78. *Pl.* 1, *fig.* 3.
1876.	Roemer.	Lethæa geogn. *Pl.* 31, *fig.* 9.
1877.	Nicholson.	Life-hist. earth, 145. *Fig.* 89.
1879.	"	Manual palæont., 2d ed., i: 405. *Fig.* 256.
1880.	Scudder.	Dev. ins. N. Brunsw. (Anniv. mem. Bost. soc. nat. hist.), 7–11. *Pl.* 1, *figs.* 5, 9, 10.
1880.	Dawson.	Chain of life, 140. *Fig.* 123*a*.
1881.	Hagen.	Bull. mus. comp. zool., viii: 276.
1883.	Lacoe.	List pal. foss. ins., 14.
1885.	Scudder.	Earl. winged ins. Amer., 3–4. *Pl.*, *figs.* 10, 11; *fig.* on *p.* 3.
1885.	"	Mem. Bost. soc. nat. hist., iii: 323 (Palephemera).
1885.	Brongniart.	Bull. soc. amis sc. Rouen, (3), xxi: 56.
1885.	"	Geol. mag., (3), ii: 485.
1885.	"	Trans. geol. soc. Manch., xviii: 275.
1885.	"	Foss. ins. prim. rocks, 7.
1885.	"	Jahrb. geol. reichsanst., xxxv: 653.
1885.	Hagen.	Nature, xxxii: 54.
1885.	"	Devon. ins., 2–4.
1885.	"	Zool. anz., viii: 298–299.
1885.	Scudder.	Zittel, Handb. palaeont., i, th. ii: 758. *Fig.* 943.
1886.	"	Zittel-Barrois, Traité de paléont., ii: 758. *Fig.* 959.
1886.	"	Bull. U. S. geol. surv., No. 31: 41.
1886.	Brauer.	Ann. naturh. hofmus., i: 110–111, 113.
1889.	Miller.	N. A. geol. and pal., 580. *Fig.* 1094.
1889.	Brongniart.	Ann. géol. univ., v: 1021.
1889.	Nicholson.	Manual palæont., 3d ed., i: 594. *Fig.* 445.
1890.	Lesley.	Dict. foss. Penns., ii: 663. *Fig.*
1890.	Scudder.	Foss. ins. N. A., i: 159–163, 277, 287. *Pl.* 7, *figs.* 5, 9, 10; *fig.* on *p.* 277.

501. **Polyernus complanatus.** (Gerarina.)

Locality: Mazon Creek, Ill. Horizon: Carboniferous.

1885.	Scudder.	Mem. Bost. soc. nat. hist., iii: 343. *Pl.* 32, *figs.* 8, 11.
1886.	"	Bull. U. S. geol. surv., No. 31: 44.
1889.	Miller.	N. A. geol. and pal., 580.
1890.	Lesley.	Dict. foss. Penns., ii: 730.
1890.	Scudder.	Foss. ins. N. A., i: 307. *Pl.* 18, *figs.* 8, 11.

502. **Polyernus laminarum.** (Gerarina.)

Locality: Pittston, Pa. Horizon: Carboniferous.

1885.	Scudder.	Mem. Bost. soc. nat. hist., iii: 343. *Pl.* 31, *fig.* 1.
1886.	"	Bull. U. S. geol. surv., No. 31: 44.
1889.	Miller.	N. A. geol. and pal., 580.
1890.	Lesley.	Dict. foss. Penns., ii: 730. *Fig.*
1890.	Scudder.	Foss. ins. N. A., i: 307. *Pl.* 17, *fig.* 1.

503. **Propteticus infernus.** (Palæopterina.)

Locality: Little Vermilion River, Ill. Horizon: Carboniferous.

1883.	Scudder.	MSS.
1883.	Lacoe.	List pal. foss. ins., 14–15.
1885.	Scudder.	Mem. Bost. soc. nat. hist., iii: 334–336. *Pl.* 31, *figs.* 3, 4.
1885.	"	Zittel, Handb. palaeont., i, th. ii: 760. *Fig.* 947.
1886.	"	Zittel-Barrois, Traité de paléont., ii: 760. *Fig.* 963.

1886. Scudder. Bull. U. S. geol. surv., No. 31: 43.
1886. Brauer. Ann. naturh. hofmus., i: 113.
1889. Miller. N. A. geol. and pal., 581.
1890. Lesley. Dict. foss. Penns., ii: 772. *Fig.*
1890. Scudder. Foss. ins. N. A., i: 298–300. *Pl.* 17, *figs.* 3, 4.

504. Protagrion ——.

Locality: Commentry, France. **Horizon**: Carboniferous.

1885. Brongniart. Bull. soc. amis sc. Rouen, (3), xxi: 65–66.
1885. " Rev. scient., (3), xxxvi: 278.

505. Protascalaphus ——.

Locality: Commentry, France. **Horizon**: Carboniferous.

1885. Brongniart. Bull. soc. amis sc. Rouen, (3), xxi: 67.

506. Protocapnia ——.

Locality: Commentry, France. **Horizon**: Carboniferous.

1885. Brongniart. Bull. soc. amis sc. Rouen, (3), xxi: 63.
1885. " Rev. scient., (3), xxxvi: 278.

507. Protodiamphipnoa ——.

Locality: Commentry, France. **Horizon**: Carboniferous.

1885. Brongniart. Bull. soc. amis sc. Rouen, (3), xxi: 66.

508. Protogryllacris brongniarti. (Hemeristina.)

Locality: Coalbrookdale, England. **Horizon**: Carboniferous.

1885. Brongniart. Bull. soc. amis sc. Rouen, (3), xxi: 59.
1885. " Rev. scient., (3), xxxvi: 276.
1885. " Geol. mag., (3), ii: 486.
1885. " Trans. geol. soc. Manch., xviii: 278.
1885. " Foss. ins. prim. rocks, 10.

See also Lithosialis brongniarti, etc.

509. Protokollaria ingens.

Locality: Commentry, France. **Horizon**: Carboniferous.

1885. Brongniart. Bull. soc. amis sc. Rouen, (3), xxi: 66. *Pl.* 3, *fig.* 3.
1886. Brauer. Ann. naturh. hofmus., i: 108. *Pl.* 7, *fig.* 6.

510. Protoperla ——.

Locality: Commentry, France. **Horizon**: Carboniferous.

1885. Brongniart. Bull. soc. amis sc. Rouen, (3), xxi: 66.

511. Prototettix lithanthraca. (Homothetidæ.)

Locality: Saarbrück, Germany. **Horizon**: Carboniferous.

1856. Giebel. Insect. d. vorwelt, 306–307.

See also Gryllacris lithanthraca, etc.

512. Sphecoptera ——.

Locality: Commentry, France. **Horizon**: Carboniferous.

1885. Brongniart. Bull. soc. amis sc. Rouen, (3), xxi: 63–64.
1885. " Rev. scient., (3), xxxvi: 278.

513. Strephocladus subtilis. (Palæopterina.)

Locality: Schiffweiler, Germany. **Horizon:** Carboniferous.

1885. Scudder. Mem. Bost. soc. nat. hist., iii: 337.
1885. " Zittel, Handb. palaeont., i, th. ii: 760. *Fig.* 948.
1886. " Zittel Barrois, Traité de paléont., ii: 760. *Fig.* 964.
1886. " Bull. U. S. geol. surv., No. 31: 43.
1886. Brauer. Ann. naturh. hofmus., i: 113.
1890. Scudder. Foss. ins. N. A., i: 301.
See also Petrablattina subtilis.

Termes spp. **See** I, ORTHOPT., Idem.

514. Termes? ——.

Locality: Mons, Belgium. **Horizon:** Carboniferous.

1875. Borre. Compt. rend. soc. ent. Belg., (2), xii: 7.
1875. " Ann. soc. ent. Belg., xviii: 5–6. *Pl.* 5, *fig.* 3.
1875. " Empr. d'ins. foss., 5–6. *Pl.* 5. *fig.* 3.
See also I, ORTHOPT., Termes haidingeri.

515. Termes buchi.

Locality: Jägersfreude, Germany. **Horizon:** Carboniferous.

1877. Goldenberg. Fauna saræp. foss., ii: 50.
See also Termes (Calotermes) buchi.

516. Termes (Calotermes) buchi.

Locality: Jägersfreude, Germany. **Horizon:** Carboniferous.

1867. Goldenberg. Vorweltl. fauna steink. Saarbr., 12–13. *Pl.* 2, *fig.* 9 (ined.)
1873. " Fauna saræp. foss., i: 12–13. *Pl.* 2, *fig.* 9.
See also Termes buchi.

517. Termes contusus. (Homothetidæ.)

Locality: Vermilion Co., Ill. **Horizon:** Carboniferous.

1878. Scudder. Proc. Bost. soc. nat. hist., xix: 300–301.
1878. " Entom. notes, vi: 54–55.
1883. Lacoe. List. pal. foss. ins., 15.
See also Didymophleps contusa, etc.

Termes hageni. **See** I, ARACHNIDA, Idem.

518. Termes (Mixotermes) lugauensis. (Homothetidæ.)

Locality: Lugau, Saxony. **Horizon:** Carboniferous.

1881. Sterzel. Ber. naturw. gesellsch. Chemn., vii: 273–276. *Pl., figs.* 3–5.
See also Mixotermes lugauensis, etc.

Termitidium spp. **See** I, ORTHOPT., Idem.

519. Trichaptum ——.

Locality: Commentry, France. **Horizon:** Carboniferous.

1885. Brongniart. Bull. soc. amis sc. Rouen, (3), xxi: 63.
1885. " Rev. scient., (3), xxxvi: 278.

520. Woodwardia longicauda.

Locality: Commentry, France. Horizon: Carboniferous.

1885.	Brongniart.	Bull. soc. amis sc. Rouen, (3), xxi: 64.
1885.	"	Rev. scient., (3), xxxvi: 278.
1885.	"	Geol. mag., (3), ii: 489.
1885.	"	Trans. geol. soc. Manch., xviii: 284.
1885.	"	Foss. ins. prim. rocks, 16.
1885.	"	Jahrb. geol. reichsanst., xxxv: 659.

521. Woodwardia modesta.

Locality: Commentry, France. Horizon: Carboniferous.

1885.	Brongniart.	Bull. soc. amis sc. Rouen, (3), xxi: 64.
1885.	"	Rev. scient., (3), xxxvi: 278.
1885.	"	Geol. mag., (3), ii: 489.
1885.	"	Trans. geol. soc. Manch., xviii: 284.
1885.	"	Foss. ins. prim. rocks, 16.
1885.	"	Jahrb. geol. reichsanst., xxxv: 659.

522. Woodwardia nigra.

Locality: Commentry, France. Horizon: Carboniferous.

1885.	Brongniart.	Ins. foss. terr. prim., 64. *Pl.* 2, *fig.* 2; *Pl.* [4], *fig.* 1.
1885.	"	Bull. soc. amis sc. Rouen, (3), xxi: 64. *Pl.* 2, *fig.* 2.
1885.	"	Rev. scient., (3), xxxvi: 278.
1885.	"	Geol. mag., (3), ii: 489. *Pl.* 12, *fig.* 1.
1885.	"	Trans. geol. soc. Manch., xviii: 284–285. *Pl.*, *fig.* 1.
1885.	"	Foss. ins. prim. rocks, 16.
1885.	"	Jahrb. geol. reichsanst., xxxv: 659.
1886.	Brauer.	Ann. naturh. hofmus., i: 105–106. *Pl.* 8, *fig.* 12.

523. Xenoneura antiquorum. (Xenoneuridæ.)

Locality: St. John, N. B. Horizon: Devonian.

1865.	Scudder.	Dev. ins. N. Brunsw., 1 (unnamed).
1865.	"	Bailey, Obs. geol. south. N. Brunsw., 140 (unnamed).
1865.	"	Amer. journ. sc., (2), xxxix: 357 (unnamed).
1865.	"	Can. nat., n. s., ii: 235 (unnamed).
1865.	"	Trans. ent. soc. Lond., (3), ii: 117 (unnamed).
1867.	"	Can. nat., n. s., iii: 206. *Fig.* 5.
1867.	"	Geol. mag., iv: 387–388. *Pl.* 17, *fig.* 5.
1868.	"	Dawson, Acad. geol., 2d ed., 525–526. *Fig.* 184.
1868.	"	Amer. nat., ii: 163. *Fig.* 1.
1868.	"	Geol. mag., v: 174, 176.
1880.	"	Dev. ins. N. Brunsw. (Anniv. mem. Bost. soc. nat. hist.), 24–29. *Pl.* 1, *figs.* 5, 6, 7.
1880.	Dawson.	Chain of life, 140. *Fig.* 123*d*.
1881.	Hagen.	Bull. mus. comp. zool., viii: 279–280.
1883.	Lacoe.	List pal. foss. ins., 15.
1885.	Scudder.	Earl. winged ins. Amer., 6–7. *Pl.*, *figs.* 5–7.
1885.	"	Mem. Bost. soc. nat. hist., iii: 338.
1885.	Brongniart.	Bull. soc. amis sc. Rouen, (3), xxi: 57.
1885.	"	Geol. mag., (3), ii: 485.
1885.	"	Trans. geol. soc. Manch., xviii: 276.
1885.	"	Foss. ins. prim. rocks, 8.
1885.	"	Jahrb. geol. reichsanst., xxxv: 653.
1885.	Hagen.	Nature, xxxii: 53–54.

1885.	Hagen.	Zool. anz., viii: 297, 300.
1885.	“	Devon. ins., 1–2.
1885.	Scudder.	Zittel, Handb. palaeont., i, th. ii: 760. *Fig.* 949.
1886.	“	Zittel-Barrois, Traité de paléont., ii: 760. *Fig.* 965.
1886.	“	Bull. U. S. geol. surv., No. 31: 43.
1886.	Brauer.	Ann. naturh. hofmus., i: 112.
1889.	Miller.	N. A. geol. and pal., 581. *Fig.* 1096.
1890.	Scudder.	Foss. ins. N. A., i: 176–181, 280–281, 302. *Pl.* 7, *figs.* 5–7; *Pl.* 14, *figs.* 5–7.

524. Zeilleria carbonaria.

Locality: Commentry, France. Horizon: Carboniferous.

1885.	Brongniart.	Bull. soc. amis sc. Rouen, (3), xxi: 63.
1885.	“	Geol. mag., (3), ii: 489.
1885.	“	Trans. geol. soc. Manch., xviii: 283.
1885.	“	Foss. ins. prim. rocks, 15.
1885.	“	Jahrb. geol. reichsanst., xxxv: 658.

525. Zeilleria formosa.

Locality: Commentry, France. Horizon: Carboniferous.

1885.	Brongniart.	Bull. soc. amis sc. Rouen, (3), xxi: 63.
1885.	“	Geol. mag., (3), ii: 489.
1885.	“	Trans. geol. soc. Manch., xviii: 283.
1885.	“	Foss. ins. prim. rocks, 15.
1885	“	Jahrb. geol. reichsanst., xxxv: 658.

526. Zeilleria fusca.

Locality: Commentry, France. Horizon: Carboniferous.

1885.	Brongniart.	Ins. foss. terr. prim., 63. *Pl.* [5], *fig.* 2.
1885.	“	Bull. soc. amis sc. Rouen, (3), xxi: 63.
1885.	“	Geol. mag., (3), ii: 489.
1885.	“	Trans. geol. soc. Manch., xviii: 283.
1885.	“	Foss. ins. prim. rocks, 15.
1885.	“	Jahrb. geol. reichsanst., xxxv: 658.
1886.	Brauer.	Ann. naturh. hofmus., i: 110.

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527. Dictyocicada antiqua.

Locality: Commentry, France. Horizon: Carboniferous.

1885.	Brongniart.	Bull. soc. amis sc. Rouen, (3), xxi: 67.
1885.	“	Rev. scient., (3), xxxvi: 278.
1885.	“	Geol. mag., (3), ii: 491.
1885.	“	Trans. geol. soc. Manch., xviii: 288.
1885.	“	Foss. ins. prim. rocks, 19.
1885.	“	Jahrb. geol. reichsanst., xxxv: 661.

528. Eugereon ——.

Locality: Nyřan, Bohemia. Horizon: Permian.

1879.	Fritsch.	Fauna d. gaskohle Böhmens, i: 31–32.

529. Eugereon boeckingi.

Locality: Abenteuerhütte, Fürst. Birkenfeld, Germany. Horizon: Todtliegende.

1866.	Dohrn.	Eugereon boeckingi, 1–7. *Pl.* 41.
1866.	“	Palaeontogr., xiii: 333–340. *Pl.* 41.
1867.	“	Palaeontogr., xvi: 129–131. *Pl.* 8, *fig.* 1.

1867.	Dohrn.	Stett. entom. zeit., xxviii: 145–148. *Pl.* 1.
1867.	Snell. v. Voll.	Versl. alg. vergad. nederl. entom. vereen., xxii: 13.
1869.	Brauer.	Verwandl. insekt. sinne descend. theorie, 19.
1869.	"	Verhandl. k. k. zool. bot. gesellsch., 1869: 317.
1877.	Goldenberg.	Fauna saræp. foss., ii: 11–14, 50. *Pl.* 1, *figs.* 15, 15*a*.
1879.	Scudder.	Mem. Bost. soc. nat. hist., iii: 18.
1885.	"	Mem. Bost. soc. nat. hist., iii: 347.
1885.	"	Zittel, Handb. palaeont., i, th. ii: 763. *Fig.* 954.
1885.	Brongniart.	Bull. soc. amis sc. Rouen, (3), xxi: 60–61.
1885.	"	Rev. scient., (3), xxxvi: 277.
1885.	"	Geol. mag., (3), ii: 487.
1885.	"	Trans. geol. soc. Manch., xviii: 280.
1885.	"	Foss. ins. prim. rocks, 12.
1885.	"	Jahrb. geol. reichsanst., xxxv: 656.
1885.	Brauer.	Sitzungsb. akad. wiss. Wien, xci: 275–279.
1886.	"	Ann. naturhist. hofmus., i: 114.
1886.	Scudder.	Zittel-Barrois, Traité de paléont., ii: 763. *Fig.* 971.
1886.	"	Bull. U. S. geol. surv., No. 31: 45.
1889.	Nicholson.	Man. palæont., 3d ed., i: 595. *Fig.* 446.
1890.	Scudder.	Foss. ins. N. A., i: 38, 311.

530. Eugereon heeri.

Locality: Commentry, France. Horizon: Carboniferous.

1885.	Brongniart.	Bull. soc. amis sc. Rouen, (3), xxi: 60–61.
1885.	"	Rev. scient., (3), xxxvi: 277.
1885.	"	Geol. mag., (3), ii: 487.
1885.	"	Trans. geol. soc. Manch., xviii: 280.
1885.	"	Foss. ins. prim. rocks, 12.
1885.	"	Jahrb. geol. reichsanst., xxxv: 656.

531. Fulgora ebersi.

Locality: Saarbrück, Germany. Horizon: Carboniferous.

1867.	Dohrn.	Palaeontogr., xvi: 131–133. *Pl.* 8, *fig.* 2.
1876.	Gerstaecker.	Klass. ordn. arthr., Crust., i: 292 (belongs to Blattidæ).
1886.	Brauer.	Ann. naturhist. hofmus., i: 114–115.

See also Fulgorina ebersi.

532. Fulgorina ebersi.

Locality: Saarbrück, Germany. Horizon: Carboniferous.

1877.	Goldenberg.	Fauna saræp. foss., ii: 28–30, 51. *Pl.* 1, *figs.* 16–17.
1885.	Scudder.	Mem. Bost. soc. nat. hist., iii: 347.
1885.	"	Zittel, Handb. palaeont., i, th. ii: 764. *Fig.* 956.
1885.	Brongniart.	Bull. soc. amis sc. Rouen, (3), xxi: 67.
1885.	"	Rev. scient., (3), xxxvi: 278.
1885.	"	Geol. mag., (3), ii: 491.
1885.	"	Trans. geol. soc. Manch., xviii: 287.
1885.	"	Foss. ins. prim. rocks, 19.
1885.	"	Jahrb. geol. reichsanst., xxxv: 661.
1886.	Scudder.	Zittel-Barrois, Traité de paléont., ii: 764. *Fig.* 972.
1886.	"	Bull. U. S. geol. surv., No. 31: 45.
1890.	"	Foss. ins. N. A., i: 311.

See also Fulgora ebersi.

533. Fulgorina goldenbergi.

Locality: Commentry, France. Horizon: Carboniferous.

1885.	Brongniart.	Ins. foss. terr. prim., 67. *Pl.* [5], *fig.* 5.
1885.	"	Bull. soc. amis sc. Rouen, (3), xxi: 67.
1885.	"	Rev. scient., (3), xxxvi: 278.
1885.	"	Geol. mag., (3), ii: 491 (goldendergi).
1885.	"	Trans. geol. soc. Manch , xviii: 287.
1885.	"	Foss. ins. prim. rocks, 19.
1885.	"	Jahrb. geol. reichsanst., xxxv: 661.

Fulgorina goldendergi. See Fulgorina goldenbergi.

Fulgorina klieveri. See Fulgorina kliveri.

534. Fulgorina kliveri.

Localities: Saarbrück, Weissig, Michelsberg, Germany. Horizon: Carboniferous.

1869.	Goldenberg.	Neues jahrb. f. mineral., 1869: 166–167 (klieveri). *Pl.* 3, *figs.* 13, 13*A*.
1877.	"	Fauna saræp. foss., ii: 31, 51. *Pl.* 1, *figs.* 18, 18*a*.
1875.	E. Geinitz.	Neues jahrb. f. mineral., 1875: 6. *Pl.* 1, *fig.* 3.
1875.	"	Neue aufschl. dyas v. Weissig, 6. *Pl.* 1, *fig.* 3.
1883.	Kliver.	Neue blatt. Saarbr., 10.
1883.	"	Palaeontogr. xxix: 258.
1885.	Scudder.	Mem. Bost. soc. nat. hist., iii: 348.
1890.	"	Foss. ins. N. A., i: 312.

See also Megablattina kliveri.

535. Fulgofina lebachensis.

Locality: Lehbach, Germany. Horizon: Lower Dyas.

1877.	Goldenberg.	Fauna saræp. foss., ii: 30–31, 51. *Pl.* 1, *figs,* 19, 19*a*.
1885.	Scudder.	Mem. Bost. soc. nat. hist., iii: 348.
1885.	Brongniart.	Bull. soc. amis sc., Rouen, (3), xxi: 67.
1885.	"	Rev. scient., (3), xxxvi: 278.
1885.	"	Geol. mag., (3), ii: 491.
1885.	"	Trans. geol. soc. Manch., xviii: 287.
1885.	"	Foss. ins. prim. rocks, 19.
1885.	"	Jahrb. geol. reichsanst., xxxv: 661.
1890.	Scudder.	Foss. ins. N. A., i: 312.

536. Fulgorina minor.

Locality: Commentry, France. Horizon: Carboniferous.

1885.	Brongniart.	Bull. soc. amis sc. Rouen, (3), xxi: 67.
1885.	"	Rev. scient., (3), xxxvi: 278.
1885.	"	Geol. mag., (3), ii: 491.
1885.	"	Trans. geol. soc. Manch., xviii: 287.
1885.	"	Foss. ins. prim. rocks, 19.
1885.	"	Jahrb. geol. reichsanst., xxxv: 661.

537. Fulgorina ovalis.

Locality: Commentry, France. Horizon: Carboniferous.

1885.	Brongniart.	Bull. soc. amis sc. Rouen, (3), xxi: 78.
1885.	"	Rev. scient., (3), xxxvi: 278.
1885.	"	Geol. mag., (3), ii: 491.
1885.	"	Trans. geol. soc. Manch., xviii: 287.
1885.	"	Foss. ins. prim. rocks, 19.
1885.	"	Jahrb. geol. reichsanst., xxxv: 661.

538. Macrophlebium hollebeni.

Locality: Manebach, Thüringen. Horizon: Carboniferous.

1869.	Goldenberg.	Neues jahrb. f. mineral., 1869: 164–166. *Pl.* 3, *figs.* 12*A*, 12*a*.
1885.	Scudder.	Mem. Bost. soc. nat. hist., iii: 348.
1885.	Brongniart.	Bull. soc. amis sc. Rouen, (3), xxi: 59.
1885.	“	Geol. mag., (3), ii: 487.
1885.	“	Trans. geol. soc. Manch., xviii: 279.
1885.	“	Foss. ins. prim. rocks, 11.
1885.	“	Jahrb. geol. reichsanst., xxxv: 655.
1885.	Scudder.	Zittel, Handb. palaeont., i, th. ii: 764 (cockroach?).
1886.	“	Zittel-Barrois, Traité de paléont., ii: 764 (cockroach?).
1886.	“	Bull. U. S. geol. surv., No. 31: 45.
1890.	“	Foss. ins. N. A., i: 312.

Megablattina klieveri. See **Megablattina kliveri.**

539. Megablattina kliveri.

Locality: Germany. Horizon: Carboniferous.

1885.	Brongniart.	Bull. soc. amis sc. Rouen, (3), xxi: 58 (klieveri).
1885.	“	Geol. mag., (3), ii: 486.
1885.	“	Trans. geol. soc. Manch., xviii: 278.
1885.	“	Foss. ins. prim. rocks, 10.
1885.	“	Jahrb. geol. reichsanst., xxxv: 655.

See also Fulgorina kliveri.

540. Palæocixius antiquus.

Locality: Commentry, France. Horizon: Carboniferous.

1885.	Brongniart.	Bull. soc. amis sc. Rouen, (3), xxi: 67.
1885.	“	Geol. mag., (3), ii: 491 (Protocixius).
1885.	“	Trans. geol. soc. Manch., xviii: 288 (Protocixius).
1885.	“	Foss. ins. prim. rocks, 19 (Protocixius).
1885.	“	Jahrb. geol. reichsanst., xxxv: 661.

541. Palæocixius fayoli.

Locality: Commentry, France. Horizon: Carboniferous.

1885.	Brongniart.	Bull. soc. amis sc. Rouen, (3), xxi: 67.
1885.	“	Geol. mag., (3), ii: 491 (Protocixius).
1885.	“	Trans. geol. soc. Manch., xviii: 288 (Protocixius).
1885.	“	Foss. ins. prim. rocks, 19 (Protocixius).
1885.	“	Jahrb. geol. reichsanst., xxxv: 661.

542. Phthanocoris occidentalis.

Locality: Kansas City, Mo. Horizon: Carboniferous.

1883.	Scudder.	Proc. Bost. soc. nat hist., xxii: 58–59
1883.	Lacoe.	List pal. foss. ins., 14.
1885.	Scudder.	Mem. Bost. soc. nat. hist., iii: 348–349. *Pl.* 32, *fig.* 4.
1885.	Brongniart.	Bull. soc. amis sc. Rouen, (3), xxi: 67.
1885.	“	Rev. scient., (3), xxxvi: 278.
1885.	“	Geol. mag., (3), ii: 491.
1885.	“	Trans. geol. soc. Manch., xviii: 288.
1885.	“	Foss. ins. prim. rocks, 19.
1885.	“	Jahrb. geol. reichsanst., xxxv: 661.
1885.	Scudder	Zittel, Handb. palaeont., i, th. ii: 764. *Fig.* 957.

1886.	Scudder.	Zittel-Barrois, Traité de paléont., ii: 764. *Fig.* 973.
1886.	"	Bull. U. S. geol. surv., No. 31: 45.
1889.	Miller.	N. A. geol. and pal., 580.
1890.	Lesley.	Dict. foss. Penns., ii: 639. *Fig.*
1890.	Scudder.	Foss. ins. N. A., i: 312–313. *Pl.* 18, *fig.* 4.

543. Protociccus fuscus.

Locality: Commentry, France. Horizon: Carboniferous.

1885.	Brongniart.	Bull. soc. amis sc. Rouen, (3), xxi: 67.
1885.	"	Geol. mag., (3), ii: 491.
1885.	"	Trans. geol. soc. Manch., xviii: 288.
1885.	"	Foss. ins. prim. rocks, 19.
1885.	"	Jahrb. geol. reichsanst., xxxv: 661.

544. Protociccus parvulus.

Locality: Commentry, France. Horizon: Carboniferous.

1885.	Brongniart.	Bull. soc. amis sc. Rouen, (3), xxi: 67.
1885.	"	Geol. mag., (3), ii: 491.
1885.	"	Trans. geol. soc. Manch., xviii: 288.
1885.	"	Foss. ins. prim. rocks, 19.
1885.	"	Jahrb. geol. reichsanst., xxxv: 661.

Protocixius antiquus. See Palæocixius antiquus.

Protocixius fayoli. See Palæocixius fayoli.

545. Rhipidioptera elegans.

Locality: Commentry, France. Horizon: Carboniferous.

1885.	Brongniart.	Bull. soc. amis sc. Rouen, (3), xxi: 67.
1885.	"	Rev. scient., (3), xxxvi: 278.
1885.	"	Geol. mag., (3), ii: 491.
1885.	"	Trans. geol. soc. Manch., xviii: 284 (belongs on 288).
1885.	"	Foss. ins. prim. rocks, 19.
1885.	"	Jahrb. geol. reichsanst., xxxv: 661.

546. Scudderia ——.

Locality: Commentry, France. Horizon: Carboniferous.

1885.	Brongniart.	Bull. soc. amis sc. Rouen, (3), xxi: 61.
1885.	"	Rev. scient., (3), xxxvi: 277.

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547. —— ——(pupa.)

Locality: Bradley, England. Horizon: Carboniferous.

1867.	Binney.	Proc. lit. phil. soc. Manchester, vi: 59.
1867.	"	Geol. mag., iv: 132.

548. —— ——.

Locality: Coalbrookdale, England. Horizon: Carboniferous.

1834.	Prestwich.	Lond. Edinb. phil. mag., iv: 376.

549. ——— ———.

Locality: [Bohemia.] Horizon: Carboniferous.

1836. **Sternberg.** Verhandl. gesellsch. vaterl. mus. Böhm., 1836: 34–35 (regarded by him as larval mines of Lepidoptera). *Pl.* 1, *fig.* 3–4.

See also **Xyloryctes septarius.**

550. ——— ———.

Locality: Yorkshire, England. Horizon: Coal Slate.

1830. **Taylor.** Lond., mag. nat. hist., iii: 361.

551. ——— ———.

Locality: Danby coalpits, Yorkshire, England. Horizon: Carboniferous.

1830. **Taylor.** Lond., mag. nat. hist., iii: 361.

552. ——— ———. (Carabidæ.)

Locality: Steinkunzendorf, Schlesien. Horizon: Culmschichte.

1885. **Dathe.** Zeitschr. deutsch. geol. gesellsch., 1885: 542–543.
1885. **Scudder.** Zittel, Handb. palaeont., i, th. ii: 764 note.
1886. " Zittel-Barrois, Traité de paléont., ii: 764 note.
1886. " Bull. U. S. geol. surv., No. 31: 106 note.

553. ——— ———. (Tenebrionidæ.)

Locality: Steinkunzendorf, Schlesien. Horizon: Culmschichte.

1885. **Dathe.** Zeitschr. deutsch. geol. gesellsch., 1885: 542–543.
1885. **Scudder.** Zittel, Handb. palaeont., i, th. ii: 764 note.
1886. " Zittel-Barrois, Traité de paléont, ii: 764 note.
1886. " Bull. U. S. geol. surv., No. 31: 106 note.

Curculioides ansticii. See I, ARACHNIDA, Idem.

Curculioides prestvicii. See I, ARACHNIDA, Idem.

Duma prestvicii. See I, ARACHNIDA, Idem.

Hevila ansticii. See I, ARACHNIDA, Idem.

554. Hylesinus ——— **(borings).** (Scolytidæ.)

Locality: Autun, France. Horizon: Carboniferous.

1877. **Brongniart.** Ann. soc. ent. Fr., (5), vii: 214–217. *Pl.* 7^{II}, *figs.* 1–4.
1878. **Girard.** La nature, vi: 112. *Figs.* 1–4.
1885. **Scudder.** Zittel, Handb. palaeont., i, th. ii: 764. *Fig.* 958.
1886. " Zittel-Barrois, Traité de paléont., ii: 764. *Fig.* 974.

555. Troxites germari.

Localities: Salzbach, Altenwald, Germany. Horizon: Carboniferous.

1854. **Goldenberg.** Palaeontogr., iv: 36. *Pl.* 3, *fig.* 6.
1854. " Foss. ins. Saarbr., 20. *Pl.* 1, *fig.* 6.
1856. **Giebel.** Insect. d. vorwelt, 36–37.
1867. **Goldenberg.** Vorweltl. fauna steink. Saarbr., 7. *Pl.* 2, *fig.* 1 (ined.)
1873. " Fauna saræp. foss., 7. *Pl.* 2, *fig.* 1.
1876. **Gerstaecker.** Klass. ordn. arthr., Crust., i: 289 (coleopteron?).
1877. **Goldenberg.** Fauna saræp. foss., ii: 52.
1879. **Scudder.** Mem. Bost. soc. nat. hist., iii: 19.

1885. Scudder. Zittel, Handb. palaeont., i, th. ii: 764, 794 (fruit?).
1886. " Zittel-Barrois, Traité de paléont., ii: 764, 794.
1886. " Bull. U. S. geol. surv., No. 31: 46, 73.
1890. " Foss. ins. N. A., i: 39.
(Probably not an insect.)

556. Xyloryctes planus.

Locality: Overhohndorf, Germany. Horizon: Carboniferous.

1855. Geinitz. Verstein. steinkohlenf. Sachsen, 1-2 (unnamed). *Pl.* 8, *figs.* 1, 4.
1874. Frič. Arch. naturwiss. landesdurchf. Böhm., 2, ii, i: 16. *Pl.* 3, *fig.* 5.
1884. Kušta. Vesmír, xiii: 97-98.

557. Xyloryctes septarius.

Locality: [Bohemia.] Horizon: Carboniferous.

1874. Frič. Arch. naturwiss. landesdurchf. Böhm., 2, ii, i: 15-16. *Pl.* 3, *fig.* 6.
1884. Kušta. Vesmír, xiii: 97-98.
See also ——— ——— Sternberg.

"Caterpillar." [Lepidoptera.] See I, MYRIAPODA, Euphoberia ferox.

Larval mines. [Lepidoptera.] See I, COLEOPT. ——— ——— Sternb.

Breyeria borinensis. [Lepidoptera.] See I, ORTHOPT., Idem.

558. ——— ———.

Locality: Near Glasgow, Scotland. Horizon: Carboniferous.

1841. Buckland. Proc. geol. soc. Lond., iii: 505. (Hymenoptera.)
1842. " Ann. mag. nat. hist., ix: 163.

II.—MESOZOIC FOSSILS.

MYRIAPODA.

559. Geophilus proavus.

Locality: Kelheim, Bavaria. Horizon: Jura.

1842. Germar. Münst., Beitr. z. petref., v: 89-90. *Pl.* 9, *fig.* 9.
1852. Giebel. Deutschl. petref., 634.
1856. " Insect d. vorwelt, 489.
1862. Hagen. Palaeontogr., x: 111 (a nereid worm).
1869. Weyenbergh. Tijdschr. v. ent., (2), iv: 237.
1870? Ehlers. Palaeontogr., xvii: 145.
1885. Scudder. Zittel, Handb. palaeont., i, th. ii: 725 (annelid).
1886. " Zittel-Barrois, Traité de paléont., ii: 724.
1886. " Bull. U. S. geol. surv., No. 31: 13, 14.

560. Julopsis cretacea. (Julidæ.)

Locality: Unter Atanekerdluk, Greenland. Horizon: Cretaceous.

1874. Heer. Kreideflora arct. zone (k. svensk. vetensk. akad. handl., xii; Flora foss. arct., iii), 120-121. *Pl.* 33, *fig.* 7.
1885. Scudder. Zittel, Handb. palaeont., i, th. ii: 725, 731.
1886. " Zittel-Barrois, Traité de paléont., ii: 724, 730.
1886. " Bull. U. S. geol. surv., No. 31: 13, 18.

ARACHNIDA.

561. —— ——.

Locality: Hasfield, England. Horizon: Lower Lias.

1873. Brodie. Distr. corr. foss. ins., 17.

562. —— ——.

Locality: Eichstadt, Bavaria. Horizon: Jura.

1737. Kundmann. Rar. nat. art., 236. *Pl.* 12, *fig.* 14.
(Probably not an arachnid.)

563. Chelifer fossilis.

Locality: Solenhofen, Bavaria. Horizon: Jura.

1874. Weyenbergh. Periód. zool., i: 89 (fossils) (no description).
1874. " Énum. syst. faune ent. mésoz., 3 (no description).
(Probably not an arachnid.)

Hasseltia primigenius. See Hasseltides primigenius.

564. Hasseltides primigenius. (Agalenidæ.)

Locality: Solenhofen, Bavaria. Horizon: Jura.

1869. Weyenbergh. Arch. mus. Teyl., ii: 253–254. *Pl.* 34, *fig.* 1.
1869. " Ins. foss. calc. lithogr., 7–8. *Pl.* 1, *fig.* 1.
1869. " Tijdschr. v. ent., (2), iv: 237 (Hasseltia).
1873. " Arch. mus. Teyl., iii: 234–236.
1873. " Notes ins. calc. jurass., 1–3.
1874. " Periód. zool., i: 89.
1874. " Énum. syst. faune ent. mésoz., 3.

565. Nymphon (vic.) ——.

Locality: Solenhofen, Bavaria. Horizon: Jura.

1842. Gray. Buckl., Ann. mag. nat. hist., ix: 162–163.
1842. " Buckl., Quart. journ. geol. soc. Lond., iii: 504–505.
(Probably not an arachnid.)
See also Pycnogonites uncinatus.

566. Palpipes cursor.

Locality: Solenhofen, Bavaria. Horizon: Jura..

1851. Roth. Gel. anz. bayer. akad. wiss., xxxii: 167.
1851. " Neues jahrb. min., 1851: 377.
1856. Giebel. Insect. d. vorwelt, 469.
1869. Weyenbergh. Tijdschr. v. ent., (2), iv: 237 (custor).
1874. " Periód. zool., i: 88.
1874. " Énum. syst. faune ent. mésoz., 2.
(Not an arachnid.)
See also Phalangites multipes.

Palpipes custor. See Palpipes cursor.

567. Palpipes priscus.

Locality: Solenhofen, Bavaria. Horizon: Jura.

1851. Roth. Gel. anz. bayer. akad. wiss., xxxii: 166. *Fig.*
1851. " Neues jahrb. min., 1851: 377. *Pl.* 4*B*, *fig.* 8.
1852. Bronn. Lethæa geogn., 3^e aufl., ii, th. ii: 429–430. *Pl.* 24, *fig.* 19.

1854. Pictet. Traité paléont., 2e éd., ii: 407–408. *Pl.* 41, *fig.* 2.
1856. Giebel Insect. d. vorwelt, 469.
1861. Meyer. Neues jahrb. min., 1861: 561 (refers it to Crustacea).
1863. " Palaeontogr., x: 299–304. *Pl.* 1, *figs.* 1–4.
1863. Winkler. Cat. syst. coll. pal. mus. Teyl., 421.
1869. Weyenbergh. Tijdschr. v. ent., (2), iv: 237.
1873. Seebach. Zeitschr. deutsch. geol. gesellsch., xxv: 340–346 (**Crustacea**). *Pl.* 8.
1874. Weyenbergh. Periód. zool., i: 88.
1874. " Énum. syst. faune ent. mésoz., 2.
1890. McCook. Amer. spiders, ii: 457–458. *Figs.* 385–386.
(Not an arachnid.)

568. Phalangites multipes.

Locality: Solenhofen, Bavaria. Horizon: Jura.

1851. Münster. In litt.
1851. Roth. Gel. anz. bayer. akad. wiss., xxxii: 164.
1851. " Neues jahrb. min., 1851: 375.
(Not an arachnid.)
See also Palpipes cursor.

569. Phalangites priscus.

Locality: Solenhofen, Bavaria. Horizon: Jura.

1839. Münster. Beitr. z. petref., i: 84–85. *Pl.* 8, *figs.* 3–4.
1852. Quenstedt. Handb. petref., 308. *Pl.* 21, *figs.* 26, 27.
1870. Thorell. European spiders, i: 222–223.
(Not an arachnid.)
See also Palpipes priscus.

570. Pycnogonites uncinatus.

Locality: Solenhofen, Bavaria. Horizon: Jura.

1852. Quenstedt. Handb. petref., 308. *Pl.* 21, *fig.* 28.
(Probably not an arachnid.)
See also Nymphon ——— ——— Gray.

HEXAPODA.

571. ——— ———. (Galls.)

Localities: Kansas and Nebraska. Horizon: Dakota Group.

1882. Hagen. Nature, xxv: 265–266 (refers to figs. in Lesquereux, Cret. flora, Hayden Rep.).

572. ——— ———.

Locality: Near Chanda, Central India. Horizon: Kota Maleri Group.

1879. Medl.-Blanf. Geol. India, i: 152, 154.

573. ——— ———.

Locality: England. Horizon: Lower Lias.

1845. Murchison. Geol. Cheltenham, 108. *Pl.* 9, *fig.* 1*ab*.

574. ——— ———. (Pupa.)

Locality: Siberia. Horizon: ?

1784. Schröter. Neue litt. u. beytr., i: 413–415. *Pl.* 3, *figs.* 14–15.

575. ——— ———.

Locality: Durdlestone Bay, England. Horizon: Lower Purbecks.

1854. Westwood. Quart. journ. geol. soc. Lond., x: 387, 395. *Pl.* 17, *fig.* 7.

576. ——— ———.

Locality: Durdlestone Bay, England. Horizon: Lower Purbecks.

1854. Westwood. Quart. journ. geol. soc. Lond., x: 389, 396. *Pl.* 18, *fig.* 7.

577. ——— ———.

Locality: Durdlestone Bay, England. Horizon: Lower Purbecks.

1854. Westwood. Quart. journ. geol. soc. Lond., x: 389, 396. *Pl.* 18, *fig.* 8.

578. ——— ———.

Locality: Durdlestone Bay, England. Horizon: Lower Purbecks.

1854. Westwood. Quart. journ. soc. Lond., x: 389, 396. *Pl.* 18, *fig.* 13.

579. ——— ———.

Locality: Durdlestone Bay, England. Horizon: Lower Purbecks.

1854. Westwood. Quart. journ. geol. soc. Lond., x: 389, 396. *Pl.* 18, *fig.* 15.

ORTHOPTERA.

580. ——— ———.

Locality: Dumbleton, England. Horizon: Upper Lias.

1873. Brodie. Distr. corr. foss. ins., 15.

581. ——— ———.

Locality: Grafton, England. Horizon: Lower Lias.

1873. Brodie. Distr. corr. foss. ins., 16.

582. ——— ———.

Locality: Copt Heath near Knowle, England. Horizon: Lower Lias.

1875. Brodie. Lower Lias Eatington, etc., 10.

583. ——— ———.

Localities: Brown's Wood and Stooper's Wood, near Henley in Arden, England.
Horizon: Lias.

1875. Brodie. Lower Lias Eatington, etc., 10.

584. ——— ———.

Locality: Ilminster, England. Horizon: Upper Lias.

1878. Goss. Proc. geol. assoc., vi: 130 note.
1878. " Ins. fauna mesoz. per., ii: 17 note.

585. ——— ———.

Locality: Durdlestone Bay, England. Horizon: Lower Purbecks.

1854. Westwood. Quart. journ. geol. soc. Lond., x: 390, 396. *Pl.* 18, *fig.* 38.

586. ——— ———.

Locality: Durdlestone Bay, England. Horizon: Lower Purbecks.

1854. Westwood. Quart. journ. geol. soc. Lond., x: 390, 396. *Pl.* 18, *fig.* 40.

587. ——— ———.

Locality: Durdlestone Bay, England. Horizon: Lower Purbecks.

1854. Westwood. Quart. journ. geol. soc. Lond., x: 390, 396. *Pl.* 18, *fig.* 41.

588. ——— ———.

Locality: Durdlestone Bay, England. Horizon: Lower Purbecks.

1854. Westwood. Quart. journ. geol. soc. Lond., x: 390, 396. *Pl.* 18, *fig.* 42.

589. ——— ———. (Grasshopper?)

Locality: Durdlestone Bay, England. Horizon: Lower Purbecks.

1854. Westwood. Quart. journ. geol. soc. Lond., x: 388, 393. *Pl.* 14, *fig.* 5.

590. ——— ———. (Grasshopper?)

Locality: Durdlestone Bay, England. Horizon: Lower Purbecks.

1854. Westwood. Quart. journ. geol. soc. Lond., x: 388, 393. *Pl.* 14, *fig.* 7.

591. ——— ———. (Grasshopper.)

Locality: Durdlestone Bay, England. Horizon: Middle Purbecks.

1854. Westwood. Quart. journ. geol. soc. Lond., x: 384, 394. *Pl.* 15, *fig.* 14 ‡.
1886. Scudder. Mem. Bost. soc. nat. hist., iii: 451. *Pl.* 48, *figs.* 4, 8*b*.
1890. " Foss. ins. N. A., i: 343. *Pl.* 22, *figs.* 4, 8*b*.

592. ——— ———.

Locality: Durdlestone Bay, England. Horizon: Middle Purbecks.

1854. Westwood. Quart. journ. geol. soc. Lond., x: 384, 394 (Neuroptera). *Pl.* 15, *fig.* 22.

See also Blattina anceps, Aporoblattina anceps.

593. ——— ———. (Blattariæ?)

Locality: England. Horizon: Wealden.

1845. Brodie. Foss. ins. sec. rocks Engl., 121 (undetermined). *Pl.* 5, *fig.* 6.
1886. Scudder. Mem. Bost. soc. nat. hist., iii: 483.
1890. " Foss. ins. N. A., i: 375.

594. ——— ———. (Blattariæ.)

Locality: Wainlode, Strensham, England. Horizon: Lower Lias.

1845. Brodie. Foss. ins. sec. rocks Engl., 101 (Westwood, 125). *Pl.* 8, *fig.* 17.

595. ——— ———. (Blattariæ.)

Locality: Dumbleton, England. Horizon: Upper Lias.

1873. Brodie. Distr. corr. foss. ins., 15.

596. ——— ———. (Blattariæ.)

Locality: Kotá, India. Horizon: Lias?

1861. Hislop. Quart. journ. geol. soc. Lond., xvii, i: 354.

597. ——— ———. (Blattariæ.)

Locality: England. Horizon: Lias.

1871. Phillips. Geology of Oxford, 123.

598. ——— ———. (2 sp.) (Blattariæ.)

Locality: Fairplay, Colo. Horizon: Trias.
1883. Scudder. Proc. Bost. soc. nat. hist., xxii: 59.

599. ——— ———. (Blattariæ.)

Locality: Durdlestone Bay, England. Horizon: Middle Purbecks.
1854. Westwood. Quart. journ. geol. soc. Lond., x: 384, 394. *Pl.* 15, *fig.* 19.

600. ——— ———. (Blattariæ.)

Locality: Durdlestone Bay, England. Horizon: Middle Purbecks.
1854. Westwood. Quart. journ. geol. soc. Lond., x: 384, 394. *Pl.* 15, *fig.* 20.

601. ——— ———. (Gryllides.)

Localities: Forthampton, Aust, England. Horizon: Lower Lias.
1845. Brodie. Foss. ins. sec. rocks Engl., 101 (Westwood, 125). *Pl.* 9, *fig.* 3.

602. ——— ———. (Gryllides.)

Localities: Wilmcote, Binton, Apperley, Grafton, England. Horizon: Lower Lias.
1873. Brodie. Distr. corr. foss. ins., 16.

——— ———. (Gryllides.) See ——— ——— (Locustariæ).

603. ——— ———. (Leg.) (Locustariæ.)

Localities: Forthampton, Aust, England. Horizon: Lower Lias.
1845. Brodie. Foss. ins. sec. rocks Engl., 101 (Westwood, 125) (Gryllidæ). *Pl.* 9, *fig.* 2.

604. ——— ———. (Locustariæ.)

Locality: Australia. Horizon: Lower Lias.
1845. Brodie. Foss. ins. sec. rocks Engl., 101 (Gryllidæ). *Pl.* 9, *fig.* 14.

Abia duplicata. See II, NEUROPT., Idem.

605. Abia sipylus. (Blattariæ.)

Locality: Durdlestone Bay, England. Horizon: Lower Purbecks.
1856. Giebel. Insect. d. vorwelt, 263–264.
See also Sialium sipylus, Pterinoblattina sipylus.

606. Acheta quærula. (Gryllides.)

Locality: Solenhofen, Bavaria. Horizon: Jura.
1869. Weyenbergh. Arch. Mus. Teyl., ii: 276 (Achita). *Pl.* 36, *fig.* 29.
1869. " Ins. foss. calc. lithogr., 30 (Achita). *Pl.* 3, *fig.* 29.
1869. " Tijdschr. v. ent., (2), iv: 234 [134] (Achita).
1874. " Periód. zool., i: 97 (Achita).
1874. " Énum. syst. faune ent. mésoz., 11 (Achita).

•607. Acheta sedgwicki. (Gryllides.)

Locality: Vale of Wardour, England. Horizon: Purbecks.
1845. Brodie. Foss. ins. sec. rocks Engl., 6, 32, 118. *Pl.* 2, *fig.* 4.
See also Gryllus sedgwicki.

587. ——— ———.

Locality: Durdlestone Bay, England. Horizon: Lower Purbecks.

1854. Westwood. Quart. journ. geol. soc. Lond., x: 390, 396. *Pl.* 18, *fig.* 41.

588. ——— ———.

Locality: Durdlestone Bay, England. Horizon: Lower Purbecks.

1854. Westwood. Quart. journ. geol. soc. Lond., x: 390, 396. *Pl.* 18, *fig.* 42.

589. ——— ———. (Grasshopper?)

Locality: Durdlestone Bay, England. Horizon: Lower Purbecks.

1854. Westwood. Quart. journ. geol. soc. Lond., x: 388, 393. *Pl.* 14, *fig.* 5.

590. ——— ———. (Grasshopper?)

Locality: Durdlestone Bay, England. Horizon: Lower Purbecks.

1854. Westwood. Quart. journ. geol. soc. Lond., x: 388, 393. *Pl.* 14, *fig.* 7.

591. ——— ———. (Grasshopper.)

Locality: Durdlestone Bay, England. Horizon: Middle Purbecks.

1854. Westwood. Quart. journ. geol. soc. Lond., x: 384, 394. *Pl.* 15, *fig.* 14 ‡.
1886. Scudder. Mem. Bost. soc. nat. hist., iii: 451. *Pl.* 48, *figs.* 4, 8*b*.
1890. " Foss. ins. N. A., i: 343. *Pl.* 22, *figs.* 4, 8*b*.

592. ——— ———.

Locality: Durdlestone Bay, England. Horizon: Middle Purbecks.

1854. Westwood. Quart. journ. geol. soc. Lond., x: 384, 394 (Neuroptera). *Pl.* 15, *fig.* 22.

See also Blattina anceps, Aporoblattina anceps.

593. ——— ———. (Blattariæ?)

Locality: England. Horizon: Wealden.

1845. Brodie. Foss. ins. sec. rocks Engl., 121 (undetermined). *Pl.* 5, *fig.* 6.
1886. Scudder. Mem. Bost. soc. nat. hist., iii: 483.
1890. " Foss. ins. N. A., i: 375.

594. ——— ———. (Blattariæ.)

Locality: Wainlode, Strensham, England. Horizon: Lower Lias.

1845. Brodie. Foss. ins. sec. rocks Engl., 101 (Westwood, 125). *Pl.* 8, *fig.* 17.

595. ——— ———. (Blattariæ.)

Locality: Dumbleton, England. Horizon: Upper Lias.

1873. Brodie. Distr. corr. foss. ins., 15.

596. ——— ———. (Blattariæ.)

Locality: Kotá, India. Horizon: Lias?

1861. Hislop. Quart. journ. geol. soc. Lond., xvii, i: 354.

597. ——— ———. (Blattariæ.)

Locality: England. Horizon: Lias.

1871. Phillips. Geology of Oxford, 123.

598. ——— ———. (2 sp.) (Blattariæ.)

Locality: Fairplay, Colo. Horizon: Trias.
1883. **Scudder.** Proc. Bost. soc. nat. hist., xxii: 59.

599. ——— ———. (Blattariæ.)

Locality: Durdlestone Bay, England. Horizon: Middle Purbecks.
1854. **Westwood.** Quart. journ. geol. soc. Lond., x: 384, 394. *Pl.* 15, *fig.* 19.

600. ——— ———. (Blattariæ.)

Locality: Durdlestone Bay, England. Horizon: Middle Purbecks.
1854. **Westwood.** Quart. journ. geol. soc. Lond., x: 384, 394. *Pl.* 15, *fig.* 20.

601. ——— ———. (Gryllides.)

Localities: Forthampton, Aust, England. Horizon: Lower Lias.
1845. **Brodie.** Foss. ins. sec. rocks Engl., 101 (Westwood, 125). *Pl.* 9, *fig.* 3.

602. ——— ———. (Gryllides.)

Localities: Wilmcote, Binton, Apperley, Grafton, England. Horizon: Lower Lias.
1873. **Brodie.** Distr. corr. foss. ins., 16.

——— ———. (Gryllides.) See ——— ——— (Locustariæ).

603. ——— ———. (Leg.) (Locustariæ.)

Localities: Forthampton, Aust, England. Horizon: Lower Lias.
1845. **Brodie.** Foss. ins. sec. rocks Engl., 101 (Westwood, 125) (Gryllidæ). *Pl.* 9, *fig.* 2.

604. ——— ———. (Locustariæ.)

Locality: Australia. Horizon: Lower Lias.
1845. **Brodie.** Foss. ins. sec. rocks Engl., 101 (Gryllidæ). *Pl.* 9, *fig.* 14.

Abia duplicata. See II, NEUROPT., Idem.

605. Abia sipylus. (Blattariæ.)

Locality: Durdlestone Bay, England. Horizon: Lower Purbecks.
1856. **Giebel.** Insect. d. vorwelt, 263–264.
See also Sialium sipylus, Pterinoblattina sipylus.

606. Acheta quærula. (Gryllides.)

Locality: Solenhofen, Bavaria. Horizon: Jura.
1869. **Weyenbergh.** Arch. Mus. Teyl., ii: 276 (Achita). *Pl.* 36, *fig.* 29.
1869. " Ins. foss. calc. lithogr., 30 (Achita). *Pl.* 3, *fig.* 29.
1869. " Tijdschr. v. ent., (2), iv: 234 [134] (Achita).
1874. " Periód. zool., i: 97 (Achita).
1874. " Enum. syst. faune ent. mésoz., 11 (Achita).

•607. Acheta sedgwicki. (Gryllides.)

Locality: Vale of Wardour, England. Horizon: Purbecks.
1845. **Brodie.** Foss. ins. sec. rocks Engl., 6, 32, 118. *Pl.* 2, *fig.* 4.
See also Gryllus sedgwicki.

Achita quærula. See Acheta quærula.

608. **Acridiites** ——. (Acridii.)

Locality: Dobbertin, Mecklenburg. Horizon: Lower Jura.

1880. E. Geinitz. Zeitschr. deutsch. geol. gesellsch., 1880: 522–523. *Pl.* 22, *fig.* 5.
1884. " Zeitschr. deutsch. geol. gesellsch., 1884: 572.

609. **Acridiites deperditus.** (Acridii.)

Locality: Schambelen, Switzerland. Horizon: Lias.

1865. Heer. Urwelt der Schweiz, 84. *Pl.* 7, *fig.* 4.
1872. " Monde prim. Suisse, 102. *Pl.* 7, *fig.* 4.
1876. " Prim. world Switz., i: 84. *Pl.* 7, *fig.* 4.
1879. " Urwelt der Schweiz, 2e aufl., 94. *Pl.* 7, *fig.* 4.

610. **Acridiites liasinus.** (Acridii.)

Locality: Schambelen, Switzerland. Horizon: Lias.

1865. Heer. Urwelt der Schweiz, 84.
1872. " Monde prim. Suisse, 102.
1876. " Prim. world Switz., i: 84.
1879. " Urwelt der Schweiz, 2e aufl., 94.

611. **Akicera frauenfeldi.** (Acridii.)

Locality: England. Horizon: Lower Lias.

1845. Brodie. Foss. ins. sec. rocks Engl., 128 (unnamed). *Pl.* 8, *fig.* 18.
1856. Giebel. Insect. d. vorwelt, 310.

612. **Akicera heeri.** (Acridii.)

Localities: Wainlode, Strensham, England. Horizon: Lower Lias.

1845. Brodie. Foss. ins. sec. rocks Engl., 101 (unnamed). *Pl.* 8, *fig.* 17.
1856. Giebel. Insect. d. vorwelt, 310.

613. **Anthracoblattina** ——. (Palæoblattariæ.)

Locality: Fairplay, Colo. Horizon: Trias.

1884. Scudder. Amer. journ. sc., (3), xxviii: 200.
See also A. triassica.

614. **Anthracoblattina triassica.** (Palæoblattariæ.)

Locality: Fairplay, Colo. Horizon: Trias.

1890. Scudder. Mem. Bost. soc. nat. hist., iv: 464–465. *Pl.* 41, *fig.* 9.
1890. " Foss. ins. N. A., i: 440–441. *Pl.* 33, *fig.* 9.
See also Anthracoblattina ——.

615. **Aporoblattina anceps.** (Blattariæ.)

Locality: Durdlestone Bay, England. Horizon: Middle Purbecks.

1886. Scudder. Mem. Bost. soc. nat. hist., iii: 479.
1890. " Foss. ins. N. A., i: 371.
See also Blattina anceps, —— —— Westw., 15: 22.

616. **Aporoblattina butleri.** (Blattariæ.)

Locality: England. Horizon: Lias.

1886. Scudder. Mem. Bost. soc. nat. hist., iii: 482. *Pl.* 48, *fig.* 15.
1890. " Foss. ins. N. A., i: 374. *Pl.* 22, *fig.* 15.

617. Aporoblattina eatoni. (Blattariæ.)

Locality: England. Horizon: Purbecks.

1886. Scudder. Mem. Bost. soc. nat. hist., iii: 479. *Pl.* 48, *fig.* 19.
1890. " Foss. ins. N. A., i: 371. *Pl.* 22, *fig.* 19.

618. Aporoblattina exigua. (Blattariæ.)

Locality: Durdlestone Bay, England. Horizon: Lower Purbecks.

1854. Westwood. Quart. journ. geol. soc. Lond., x: 390, 396 (unnamed). *Pl.* 18, *fig.* 38.
1886. Scudder. Mem. Bost. soc. nat. hist., iii: 481–482.
1890. " Foss. ins. N. A., i: 373–374.

619. Aporoblattina incompleta. (Blattariæ.)

Locality: England. Horizon: Lias.

1886. Scudder. Mem. Bost. soc. nat. hist., iii: 481.
1890. " Foss. ins. N. A., i: 373.
See also Blattina incompleta, Blattidium incompletum.

620. Aporoblattina kollari. (Blattariæ.)

Locality: England. Horizon: Purbecks.

1886. Scudder. Mem. Bost. soc. nat. hist., iii: 480.
1890. " Foss. ins. N. A., i: 372.
See also Blattidium kollari, etc.

621. Aporoblattina maclachlani. (Blattariæ.)

Locality: England. Horizon: Purbecks.

1854. Westwood. Quart. journ. geol. soc. Lond., x: 396 (unnamed). *Pl.* 18, *fig.* 35.
1886. Scudder. Mem. Bost. soc. nat. hist., iii: 479–480. *Pl.* 48, *fig.* 18.
1890. " Foss. ins. N. A., i: 371–372. *Pl.* 22, *fig.* 18.

622. Aporoblattina nana. (Blattariæ.)

Locality: Dobbertin, Mecklenburg. Horizon: Jura.

1886. Scudder. Mem. Bost. soc. nat. hist., iii: 481.
1890. " Foss. ins. N. A., i: 373.
See also Blattina nana.

623. Aporoblattina recta. (Blattariæ.)

Locality: England. Horizon: Wealden.

1886. Scudder. Mem. Bost. soc. nat. hist., iii: 481.
1890. " Foss. ins. N. A., i: 373.
See also Blattina recta, etc.

624. Aporoblattina westwoodi. (Blattariæ.)

Locality: Durdlestone Bay, England. Horizon: Purbecks.

1854. Westwood. Quart. journ. geol. soc. Lond., x: 396 (unnamed). *Pl.* 18, *fig.* 28.
1886. Scudder. Mem. Bost. soc. nat. hist., iii: 480.
1890. " Foss. ins. N. A., i: 372.

Asilicus lithophilus. See II, DIPTERA, Idem.

625. Baseopsis forficulina. (Forficulariæ.)

Locality: Schambelen, Switzerland. **Horizon:** Lias.

1865.	Heer.	Urwelt der Schweiz, 84. *Pl.* 7, *fig.* 5.
1872.	"	Monde prim. Suisse, 103. *Pl.* 7, *fig.* 5.
1876.	"	Prim. world Switz., i: 84. *Pl.* 7, *fig.* 5.
1879.	"	Urwelt der Schweiz, 94. *Pl.* 7, *fig.* 5.

626. Baseopsis? sibirica. (Forficulariæ.)

Locality: Ust Balei, Siberia. **Horizon:** Lias.

1889.	Brauer-Redtenb.-Ganglb.	Mém. acad. sc. St. Pétersb., (7), xxxvi, No 15: 3–4. *Pl.* [1], *figs.* 1, 1*b*.

627. Bittacus dubius. (Locustariæ.)

Locality: Vale of Wardour, England. **Horizon:** Purbecks.

1845.	Brodie.	Foss. ins. sec. rocks Engl., 119 (unnamed). *Pl.* 5, *fig.* 21.
1856.	Giebel.	Insect. d. vorwelt, 258.
1886.	Deichm.	Ins. lith. schichten dresd. mus., 16–17 (cf. Elcana).

See also Clathrotermes (Elcana) geinitzi, etc.

628. Blabera avita. (Blattariæ.)

Locality: Solenhofen, Bavaria. **Horizon:** Jura.

1847.	Heyden.	Palaeontogr., i: 100–101. *Pl.* 12, *fig.* 5.
1856.	Giebel.	Insect. d. vorwelt, 497.
1869.	Weyenbergh.	Tijdschr. v. ent., (2), iv: 234, [134] (invita).
1885.	Scudder.	Zittel, Handb. palaeont., i, th. ii: 767.
1886.	"	Zittel-Barrois, Traité de paléont., ii: 767.
1886.	"	Mem. Bost. soc. nat. hist., iii: 483.
1886.	Deichm.	Ins. lith. schichten dresd. mus., 69 (Hydrophilid?).
1890.	Scudder.	Foss. ins. N. A., i: 375.

See also Musca lithophila, etc.; also COLEOPT., Pseudohydrophilus longispinosus, Prodytiscus longispinosus.

629. Blatta ——. (Blattariæ.)

Locality: Vale of Wardour, England. **Horizon:** Purbecks.

1845.	Brodie.	Foss. ins. sec. rocks Engl., 32 (Westwood, 118). *Pl.* 3, *fig.* 7.

630. Blatta ——. (Blattariæ.)

Localities: Brown's Wood and Stooper's Wood, near Henley in Arden, England.
Horizon: Lias.

1875.	Brodie.	Lower Lias Eatington, etc., 10.

Blatta dubia. See Gryllites dubius.

631. Blatta elongata. (Blattariæ.)

Locality: Durdlestone Bay, England. **Horizon:** Middle Purbecks.

1856.	Giebel.	Insect. d. vorwelt, 322.
1877.	Goldenberg.	Fauna saræp. foss., ii: 21.

See also Blattidium elongatum, etc.

632. Blatta kollari. (Blattariæ.)

Locality: England. **Horizon:** Wealden.

1856.	Giebel.	Insect. d. vorwelt, 322.

See also Blattidium kollari, etc.

633. Blatta pinna. (Blattariæ.)

Locality: Vale of Wardour, England. **Horizon**: **Purbecks.**

1845. Brodie. Foss. ins. sec. rocks Engl., 118 (unnamed). *Pl.* 5, *fig.* 5.
1856. Giebel. Insect. d. vorwelt, 322.
See also Blattidium pinna, Ctenoblattina pinna.

634. Blatta pluma. (Blattariæ.)

Locality: Durdlestone Bay, England. **Horizon**: **Middle Purbecks.**

1854. Westwood. Quart. journ. geol. soc. Lond., x: 394 (unnamed). *Pl.* 15, *fig.* 14†.
1856. Giebel. Insect. d. vorwelt, 322.
1877. Goldenberg. Fauna saræp. foss., ii: 21.
See also Pterinoblattina pluma, Blattidium pluma.

635. Blatta stricklandi. (Blattariæ.)

Locality: Vale of Wardour, England. **Horizon**: **Purbecks.**

1845. Brodie. Foss. ins. sec. rocks Engl., 32, 118. *Pl.* 4, *fig.* 11.
1856. Giebel. Insect. d. vorwelt, 317.
1877. Goldenberg. Fauna saræp. foss., ii: 21.
See also Blattidium stricklandi, Rithma stricklandi.

636. Blatta ungeri. (Blattariæ.)

Locality: Durdlestone Bay, England. **Horizon**: **Lower Purbecks.**

1854. Westwood. Quart. journ. geol. soc. Lond., x: 387, 395 (unnamed). *Pl.* 17, *fig.* 13.
1856. Giebel. Insect. d. vorwelt, 322.
1877. Goldenberg. Fauna saræp. foss., ii: 21.
See also Blattidium ungeri, Diechoblattina ungeri.

637. Blattaria dunckeri. (Blattariæ.)

Locality: Solenhofen, Bavaria. **Horizon**: **Jura.**

1874. Weyenbergh. Periód. zool., i: 86, 98. *Pl.* 3, *fig.* 12.
1874. " Énum. syst. faune ent. mésoz., 12.
1886. Scudder. Mem. Bost. soc. nat. hist., iii: 483.
1890. " Foss. ins. N. A., i: 375.

638. Blattidium ———. (Blattariæ.)

Locality: England. **Horizon**: **Wealden.**

1845. Brodie. Foss. ins. sec. rocks Engl., 119 (unnamed). *Pl.* 5, *fig.* 3.
1864. Heer. Viert. naturf. gesellsch. Zürich, ix: 290.
See also Blattina recta, etc.

639. Blattidium ———. (Blattariæ.)

Locality: Vale of Wardour, England. **Horizon**: **Purbecks.**

1877. Goldenberg. Fauna saræp. foss., ii: 21, No. 66.
See also Blattina similis, etc.

640. Blattidium ———. (Blattariæ.)

Locality: Durdlestone Bay, England. **Horizon**: **Middle Purbecks.**

1854. Westwood. Quart. journ. geol. soc. Lond., x: 394 (unnamed). *Pl.* 15, *fig.* 19.
1864. Heer. Viert. naturf. gesellsch. Zürich, ix: 289
1877. Goldenberg. Fauna saræp. foss., ii: 21, No. 69.
1886. Scudder. Mem. Bost. soc. nat. hist., iii: 483.
1890. " Foss. ins. N. A., i: 375.

641. Blattidium ——. (Blattariæ.)

Locality: Durdlestone Bay, England. **Horizon:** Lower Purbecks.

1854. Westwood. Quart. journ. geol. soc. Lond., x: 396 (unnamed). *Pl.* 18, *fig.* 35.
1864. Heer. Viert. naturf. gesellsch. Zürich, ix: 290.
1877. Goldenberg. Fauna saræp. foss., ii: 21, No. 60.

642. Blattidium ——. (Blattariæ.)

Locality: Durdlestone Bay, England. **Horizon:** Lower Purbecks.

1854. Westwood. Quart. journ. geol. soc. Lond., x: 396 (unnamed). *Pl.* 18, *fig.* 38.
1864. Heer. Viert. naturf. gesellsch. Zürich, ix: 290.
1877. Goldenberg. Fauna saræp. foss., ii: 21, No. 61.

643. Blattidium achelous. (Blattariæ.)

Locality: Durdlestone Bay, England. **Horizon:** Lower Purbecks.

1854. Westwood. Quart. journ. geol. soc. Lond., x: 390, 396. *Pl.* 18, *fig.* 36.
1856. Giebel. Insect. d. vorwelt, 318.
1864. Heer. Viert. naturf. gesellsch. Zürich, ix: 290.
1877. Goldenberg. Fauna saræp. foss., ii: 21.

644. Blattidium antiquum. (Blattariæ.)

Locality: Durdlestone Bay, England. **Horizon:** Lower Purbecks.

1864. Heer. Viert. naturf. gesellsch. Zürich, ix: 290.
See also Rithma antiqua, etc.

645. Blattidium ? avitum. (Blattariæ.)

Locality: Solenhofen, Bavaria. **Horizon:** Jura.

1864. Heer. Viert. naturf. gesellsch. Zürich, ix: 289.
1877. Goldenberg. Fauna saræp. foss., ii: 20.
See also Blabera avita, etc., Musca lithophila, etc.

646. Blattidium beroldingianum. (Blattariæ.)

Locality: Solenhofen, Bavaria. **Horizon:** Jura.

1864. Heer. Viert. naturf. gesellsch. Zürich, ix: 289, 300–301. *Pl.*, *fig.* 8.
1877. Goldenberg. Fauna saræp. foss., ii: 20.
See also Musca lithophila, etc.

647. Blattidium elongatum. (Blattariæ.)

Locality: Durdlestone Bay, England. **Horizon:** Middle Purbecks.

1854. Westwood. Quart. journ. geol. soc. Lond., x: 384, 394 (unnamed). *Pl.* 15, *fig.* 23.
1864. Heer. Viert. naturf. gesellsch. Zürich, ix: 289.
See also Blatta elongata, Mesoblattina elongata.

648. Blattidium incompletum. (Blattariæ.)

Locality: England. **Horizon:** Lias.

1864. Heer. Viert. naturf. gesellsch. Zürich, ix: 289.
1877. Goldenberg. Fauna saræp. foss., ii: 20.
See also Blattina incompleta, Aporoblattina incompleta.

649. Blattidium kneri. (Blattariæ.)

Locality: England. Horizon: Wealden.

1864. Heer. Viert. naturf. gesellsch. Zürich, ix: 291.
1877. Goldenberg. Fauna saræp. foss., ii: 21.
See also Elisama kneri.

650. Blattidium kollari. (Blattariæ.)

Locality: Vale of Wardour, England. Horizon: Purbecks.

1864. Heer. Viert. naturf. gesellsch. Zürich, ix: 290.
1877. Goldenberg. Fauna saræp. foss., ii: 21.
See also Blatta kollari, Aporoblattina kollari; also II, NEUROPT., Corydalis —— Brodie.

651. Blattidium liasinum. (Blattariæ.)

Locality: Wainlode, England. Horizon: Lias.

1864. Heer. Viert. naturf. gesellsch. Zürich, ix: 289 (liassinum).
1877. Goldenberg. Fauna saræp. foss., ii: 20.
See also Blattina liasina, etc.

Blattidium liassinum. See Blattidium liasinum.

652. Blattidium medium. (Blattariæ.)

Locality: Schambelen, Switzerland. Horizon: Lias.

1864. Heer. Viert. naturf. gesellsch. Zürich, ix: 289, 300. *Pl., fig.* 7.
1877. Goldenberg. Fauna saræp. foss., ii: 20.
See also Elisama media.

653. Blattidium minor. (Blattariæ.)

Locality: England. Horizon: Wealden.

1864. Heer. Viert. naturf. gesellsch. Zürich, ix: 291.
See also Elisama minor.

654. Blattidium molossus. (Blattariæ.)

Locality: Durdlestone Bay, England. Horizon: Middle Purbecks.

1854. Westwood. Quart. journ. geol. soc. Lond., x: 384, 394. *Pl.* 15, *fig.* 26.
1864. Heer. Viert. naturf. gesellsch. Zürich, ix: 289.
1877. Goldenberg. Fauna saræp. foss., ii: 21.
See also Nethania molossus, Elisama molossus.

655. Blattidium morrisi. (Blattariæ.)

Locality: Durdlestone Bay, England. Horizon: Lower Purbecks.

1864. Heer. Viert. naturf. gesellsch. Zürich, ix: 290.
See also Rithma morrisi.

656. Blattidium murchisoni. (Blattariæ.)

Locality: Durdlestone Bay, England. Horizon: Lower Purbecks.

1864. Heer. Viert. naturf. gesellsch. Zürich, ix: 290.
See also Rithma murchisoni, etc.

657. Blattidium nogaus. (Blattariæ.)

Locality: Durdlestone Bay, England. Horizon: Lower Purbecks.

1854. Westwood. Quart. journ. geol. soc. Lond., x: 390, 396. *Pl.* 18, *fig.* 23.
1856. Giebel. Insect. d. vorwelt, 318.
1864. Heer. Viert. naturf. gesellsch. Zürich, ix: 290.
1877. Goldenberg. Fauna saræp. foss., ii: 21.
1886. Scudder. Mem. Bost. soc. nat. hist., iii: 474.
1890. " Foss. ins. N. A., i: 366.

658. Blattidium pinna. (Blattariæ.)

Locality: Vale of Wardour, England. Horizon: Purbecks.

1864. Heer. Viert. naturf. gesellsch. Zürich, ix: 290.
1877. Goldenberg. Fauna saræp. foss., ii: 21.
See also Blatta pinna, Ctenoblattina pinna.

659. Blattidium pluma. (Blattariæ.)

Locality: Durdlestone Bay, England. Horizon: Middle Purbecks.

1864. Heer. Viert. naturf. gesellsch. Zürich, ix: 289.
See also Blatta pluma, Pterinoblattina pluma.

660. Blattidium purbeccensis. (Blattariæ.)

Locality: Durdlestone Bay, England. Horizon: Lower Purbecks.

1864. Heer. Viert. naturf. gesellsch. Zürich, ix: 290.
See also Rithma purbeccensis.

661. Blattidium ramificatum. (Blattariæ.)

Locality: Durdlestone Bay, England. Horizon: Middle Purbecks.

1864. Heer. Viert. naturf. gesellsch. Zürich, ix: 289.
See also Rithma ramificata, Elisama ramificata.

662. Blattidium similis. (Blattariæ.)

Locality: Vale of Wardour, England. Horizon: Purbecks.

1864. Heer. Viert. naturf. gesellsch. Zürich, ix: 289.
See also Blattina similis, etc.

Blattidium simyrus. See Blattidium symyrus.

663. Blattidium stricklandi. (Blattariæ.)

Locality: Vale of Wardour, England. Horizon: Purbecks.

1864. Heer. Viert. naturf. gesellsch. Zürich, ix: 290.
See also Blatta stricklandi, Rithma stricklandi.

664. Blattidium symyrus. (Blattariæ.)

Locality: Durdlestone Bay, England. Horizon: Lower Purbecks.

1854. Westwood. Quart. journ. geol. soc. Lond., x: 390, 396. *Pl.* 18, *fig.* 33.
1864. Heer. Viert. naturf. gesellsch. Zürich, ix: 290.
1877. Goldenberg. Fauna saræp. foss., ii: 21.
1885. Scudder. Proc. acad. nat. sc. Philad., 1885: 112.
1885. " Zittel, Handb. palaeont., i, th. ii: 766 (simyrus). *Fig.* 961.
1886. " Zittel-Barrois, Traité de paléont., ii: 766. *Fig.* 977.
1886. " Miall, Cockroach, 217 (simyrus). *Fig.* 124.
1886. " Mem. Bost. soc. nat. hist, iii: 474. *Pl.* 48, *fig.* 17.
1886. Deichmüller. Ins. lith. schichten dresd. mus., 14 (near Chresmoda).
1890. Scudder. Foss. ins. N. A., i: 366. *Pl.* 22, *fig.* 17.

665. Blattidium ungeri. (Blattariæ.)

Locality: Durdlestone Bay, England. **Horizon:** Lower Purbecks.

1864. **Heer.** Viert. naturf. gesellsch. Zürich, ix: 290.
See also Blatta ungeri, etc.

666. Blattidium westwoodi. (Blattariæ.)

Locality: Durdlestone Bay, England. **Horizon:** Lower Purbecks.

1864. **Heer.** Viert. naturf. gesellsch. Zürich, ix: 290.
See also Rithma westwoodi.

667. Blattina ———. (Blattariæ.)

Locality: Eichstadt, Bavaria. **Horizon:** Jura.

1886. **Deichmüller.** Ins. lith. schichten dresd. mus., 9–10.

668. Blattina anceps. (Blattariæ.)

Locality: Durdlestone Bay, England. **Horizon:** Middle Purbecks.

1854. **Westwood.** Quart. journ. geol. soc. Lond., x: 394 (unnamed) (wrongly quoted fig. 21 by Giebel). *Pl.* 15, *fig.* 22.
1856. **Giebel.** Insect. d. vorwelt, 317.
See also Aporoblattina anceps, ——— ——— Westw., 15: 22.

Blattina angusta. See Blattina angustata.

669. Blattina angustata. (Blattariæ.)

Locality: Schambelen, Switzerland. **Horizon:** Lias.

1864. **Heer.** Viert. naturf. gesellsch. Zürich, ix: 288, 299–300. *Pl., fig.* 6.
1865. " Urwelt der Schweiz, 83.
1872. " Monde prim. Suisse, 101.
1876. " Prim. world Switz., i: 83.
1877. **Goldenberg.** Fauna saræp. foss., ii: 20 (angusta).
1879. **Heer.** Urwelt der Schweiz, 2e aufl., 93.
See also Mesoblattina angustata, Blattina (Mesoblattina) angustata.

670. Blattina (Mesoblattina) angustata. (Blattariæ.)

Locality: Schambelen, Switzerland. **Horizon:** Lias.

1880. **E. Geinitz.** Zeitschr. deutsch. geol. gesellsch., 1880: 519–520.
See also Blattina angustata, etc.

671. Blattina chrysea. (Blattariæ.)

Locality: Dobbertin, Mecklenburg. **Horizon:** Lower Jura.

1880. **E. Geinitz.** Zeitschr. deutsch. geol. gesellsch., 1880: 520. *Pl.* 22, *fig.* 2.
1884. " Zeitschr. deutsch. geol. gesellsch., 1884: 570, 571.
See also Pterinoblattina chrysea.

672. Blattina (Mesoblattina) dobbertinensis. (Blattariæ.)

Locality: Dobbertin, Mecklenburg. **Horizon:** Lias.

1884. **E. Geinitz.** Zeitschr. deutsch. geol. gesellsch., 1884: 570. *Pl.* 13, *fig.* 1.
See also Mesoblattina dobbertinensis.

673. Blattina formosa. (Blattariæ.)

Compared with Blatta orientalis L.

Locality: Schambelen, Aargau, Switzerland. **Horizon**: Lias.

1852. Heer. Lias-insel Aargau, 15. *Pl.*, *figs.* 41–42.
1854. Pictet. Traité de paléont., 2e éd., ii: 362. *Pl.* 40, *fig.* 6.
1856. Giebel. Insect. d. vorwelt, 498.
1864. Heer. Viert. naturf. gesellsch. Zürich, ix: 288, 299.
1865. " Urwelt der Schweiz, 83. *Pl.* 7, *figs.* 1, 1*b*.
1872. " Monde prim. Suisse, 101. *Pl.* 7, *figs.* 1, 1*b*.
1876. " Prim. world Switz., i: 83. *Pl.* 7, *figs.* 1, 1*b*.
1877. Goldenberg. Fauna saræp. foss., ii: 20.
1879. Heer. Urwelt der Schweiz, 2e aufl., 93. *Pl.* 7, *figs.* 1, 1*b*.

See also Rithma formosa.

674. Blattina incerta. (Blattariæ.)

Locality: Dobbertin, Mecklenburg. **Horizon**: Lias.

1884. E. Geinitz. Zeitschr. deutsch. geol. gesellsch., 1884: 571, 572. *Pl.* 13, *fig.* 2.
1886. Scudder. Mem. Bost. soc. nat. hist., iii: 483.
1890. " Foss. ins. N. A., i: 375.

675. Blattina incompleta. (Blattariæ.)

Locality: England. **Horizon**: Lias.

1845. Brodie. Foss. ins. sec. rocks Engl. (unnamed). *Pl.* 8, *fig.* 13.
1856. Giebel. Insect. d. vorwelt, 317.

See also Aporoblattina incompleta, Blattidium incompletum.

676. Blattina langfeldti. (Blattariæ.)

Locality: Dobbertin, Mecklenburg. **Horizon**: Lower Jura.

1880. E. Geinitz. Zeitschr. deutsch. geol. gesellsch., 1880: 521. *Pl.* 22, *fig.* 3.
1884. " Zeitschr. deutsch. geol. gesellsch., 1884: 571.

See also Ctenoblattina langfeldti.

677. Blattina liasina. (Blattariæ.)

Locality: Wainlode, Strensham, England. **Horizon**: Lias.

1845. Brodie. Foss. ins. sec. rocks Engl., 101; Westwood, 125 (unnamed). *Pl.* 8, *fig.* 12.
1856. Giebel. Insect. d. vorwelt, 317.

See also Blattidium liasinum, Rithma liasina.

678. Blattina mathildæ. (Blattariæ.)

Locality: Dobbertin, Mecklenburg. **Horizon**: Jura.

1883. E. Geinitz. Flötzform. Mecklenb., 29–30. *Pl.* 6, *fig.* 1.
1884. " Zeitschr. deutsch. geol. gesellsch., 1884: 571.

See also Mesoblattina mathildæ.

679. Blattina media. (Blattariæ.)

Locality: Schambelen, Switzerland. **Horizon**: Lias.

1865. Heer. Urwelt der Schweiz, 83.
1872. " Monde prim. Suisse, 101.
1876. " Prim. world Switz., i: 83.
1879. " Urwelt der Schweiz, 2e aufl., 93.

680. Blattina nana. (Blattariæ.)

Locality: Dobbertin, Mecklenburg. Horizon: Jura.

1883. E. Geinitz. Flötzform. Mecklenb., 30. *Pl.* 6, *fig.* 2.
1884. " Zeitschr. deutsch. geol. gesellsch., 1884: 571.

See also Aporoblattina nana.

681. Blattina (Mesoblattina) protypa. (Blattariæ.)

Locality: Dobbertin, Mecklenburg. Horizon: Lower Jura.

1880. E. Geinitz. Zeitschr. deutsch. geol. gesellsch., 1880: 519–520. *Pl.* 22, *fig.* 1.
1884. " Zeitschr. deutsch. geol. gesellsch., 1884: 569–570.

See also Mesoblattina protypa.

682. Blattina recta. (Blattariæ.)

Locality: England. Horizon: Wealden.

1856. Giebel. Insect. d. vorwelt, 318.

See also Blattidium ——— Brodie, Aporoblattina recta.

683. Blattina (Mesoblattina?) sibirica. (Blattariæ.)

Locality: Ust Balei, Siberia. Horizon: Lias.

1889. Brauer-Redtenb.-Ganglb. Mém. acad. sc. St.-Péters., (7), xxxvi, No. 15: 12–13. *Pl.* [2], *fig.* 15.

684. Blattina similis. (Blattariæ.)

Locality: Vale of Wardour, England. Horizon: Purbecks.

1854. Brodie. Foss. ins. sec. rocks Engl., 119 (unnamed). *Pl.* 5, *fig.* 2.
1856. Giebel. Insect. d. vorwelt, 318.

See also Blattidium ——— Goldenb., Blattidium similis, Nannoblattina similis; also II, NEUROPT., Corydalis ——— Brodie.

685. Chresmoda obscura. (Acridii.)

Locality: Solenhofen, Bavaria. Horizon: Jura.

1839. Münster. MSS.
1839. Germar. Verhandl. leop.-carol. akad. naturf., xix: 201–203. *Pl.* 22, *fig.* 4.
1852. Giebel. Deutschl. petref., 637.
1856. " Insect. d. vorwelt, 311.
1862. Hagen. Palaeontogr., x: 110 (= Locusta prisca.)
1869. Weyenbergh. Tijdschr. v. ent., (2), iv: 234 [134].
1877. Assmann. Ber. versamml. deutsch. naturf., l: 192.
1886. Deichmüller. Ins. lith. schichten dresd. mus., 10–14. *Pl.* 1, *figs.* 7–12.

See also Pygolampis gigantea, Halometra gigantea, Propygolampis bronni, Locusta prisca.

Clathrotermes geinitzi. See Elcana (Clathrotermes) geinitzi.

686. Clathrotermes (Elcana) geinitzi. (Locustariæ.)

Locality: Dobbertin, Mecklenburg. Horizon: Lias.

1884. E. Geinitz. Zeitschr. deutsch. geol. gesellsch., 1884: 577–580. *Pl.* 13, *figs.* 13–23.

See also Elcana geinitzi, E. (Clathrotermes) geinitzi, E. (Clathrotermes) intercalata, E. tessellata, Bittacus dubius, Panorpidium tessellatum.

Clathrotermes intercalata. See Elcana (Clathrotermes) intercalata.

687. Conocephalus capito. (Locustariæ.)

Locality: Eichstadt, Bavaria. Horizon: Jura.

1886. Deichmüller. Ins. lith. schichten dresd. mus., 24–26. *Pl.* 2, *fig.* 12.

688. Ctenoblattina arcta. (Blattariæ.)

Locality: England. Horizon: Purbecks.

1886. Scudder. Mem. Bost. soc. nat. hist., iii: 443. *Pl.* 46, *figs.* 1, 2.
1890. “ Foss. ins. N. A., i: 335. *Pl.* 20, *figs.* 1, 2.

689. Ctenoblattina langfeldti. (Blattariæ.)

Locality: Dobbertin, Mecklenburg. Horizon: Lower Jura.

1886. Scudder. Mem. Bost. soc. nat. hist., iii: 443.
1890. “ Foss. ins. N. A., i: 335.
See also Blattina langfeldti.

690. Ctenoblattina? pinna. (Blattariæ.)

Locality: Vale of Wardour, England. Horizon: Purbecks.

1886. Scudder. Mem. Bost. soc. nat. hist., iii: 444.
1890. “ Foss. ins. N. A., i: 336.
See also Blatta pinna, Blattidium pinna.

691. Cyrtophyllites rogeri. (Locustariæ.)

Locality: Eichstadt, Bavaria. Horizon: Jura.

1888. Oppenheim. Palaeontogr., xxxiv: 223. *Pl.* 30, *fig.* 5.

692. Decticus speciosus. (Locustariæ.)

Locality: Solenhofen, Bavaria. Horizon: Jura.

1852. Giebel. Deutschl. petref., 637.
1856. “ Insect. d. vorwelt, 304.
See also Locusta speciosa, etc.

693. Diechoblattina ungeri. (Blattariæ.)

Locality: Durdlestone Bay, England. Horizon: Lower Purbecks.

1886. Scudder. Mem. Bost. soc. nat. hist., iii: 477.
1890. “ Foss. ins. N. A., i: 369.
See also Blatta ungeri, etc.

694. Diechoblattina wallacei. (Blattariæ.)

Locality: England. Horizon: Purbecks.

1886. Scudder. Mem. Bost. soc. nat. hist., iii: 477–478. *Pl.* 48, *fig.* 1.
1890. “ Foss. ins. N. A., i: 369–370. *Pl.* 22, *fig.* 1.

695. Dipluroblattina bailyi. (Blattariæ.)

Locality: England. Horizon: Purbecks.

1886. Scudder. Mem. Bost. soc. nat. hist., iii: 476–477. *Pl.* 48, *fig.* 5.
1890. “ Foss. ins. N. A., i: 368–369. *Pl.* 22, *fig.* 5.

696. Elcana amanda. (Locustariæ.)

Locality: Eichstadt, Bavaria. Horizon: Jura.

1886. Deichmüller. Ins. lith. schichten dresd. mus., 14. *Pl.* 2, *figs.* 4–5.
See also Locusta amanda, Elcana (Locusta) amanda.

697. Elcana (Locusta) amanda. (Locustariæ.)

Locality: Eichstadt, Bavaria. Horizon: Jura.

1888. Oppenheim. Palaeontogr., xxxiv: 224. *Pl.* 30, *fig.* 17.
See also Elcana amanda, Locusta amanda.

Elcana beyrichi. See II, NEUROPTERA, Idem.

698. Elcana geinitzi. (Locustariæ.)

Locality: Dobbertin, Mecklenburg. Horizon: Lower Jura.

1886. Deichmüller. Ins. lith. schichten dresd. mus., 17. *Pl.* 2, *fig.* 7.
See also Clathrotermes (Elcana) geinitzi, etc.

699. Elcana (Clathrotermes) geinitzi. (Locustariæ.)

Locality: Dobbertin, Mecklenburg. Horizon: Lower Jura.

1880. Heer. Geinitz, Zeitschr. deutsch. geol. gesellsch, 1880: 523–526. *Pl.* 22, *figs.* 7–10. •
See also Clathrotermes (Elcana) geinitzi, etc.

700. Elcana (Clathrotermes) intercalata. (Locustariæ.)

Locality: Dobbertin, Mecklenburg. Horizon: Lower Jura.

1880. Geinitz. Zeitschr. deutsch. geol. gesellsch., 1880: 526. *Pl.* 22, *fig.* 11.
See also Clathrotermes (Elcana) geinitzi, etc.

Elcana sipylus. See Sialium sipylus.

701. Elcana tessellata. (Locustariæ.)

Locality: Durdlestone Bay, England. Horizon: Middle Purbecks.

1856. Giebel. Insect. d. vorwelt, 259 (Westwood, Pl. 15, fig. 17, not Pl. 17, fig. 12).
1886. Deichmüller. Ins. lith. schichten dresd. mus., 16. *Pl.* 2, *fig.* 6.
See also Clathrotermes (Elcana) geinitzi, etc.

702. Elisama bucktoni. (Blattariæ.)

Locality: England. Horizon: Purbecks.

1886. Scudder. Mem. Bost. soc. nat. hist., iii: 466–467. *Pl.* 47, *figs.* 8, 12.
1890. " Foss. ins. N. A., i: 358–359. *Pl.* 21, *figs.* 8, 12.

703. Elisama kirkbyi. (Blattariæ.)

Locality: England. Horizon: Mesozoic.

1886. Scudder. Mem. Bost. soc. nat. hist., iii: 467–468. *Pl.* 47, *fig.* 3.
1890. " Foss. ins. N. A., i: 359–360. *Pl.* 21, *fig.* 3.

704. Elisama kneri. (Blattariæ.)

Locality: England. Horizon: Wealden.

1845. Brodie. Foss. ins. sec. rocks Engl., 118 (unnamed). *Pl.* 5, *fig.* 1.
1856. Giebel. Insect. d. vorwelt, 320.
1885. Scudder. Proc. acad. nat. sc. Philad., 1885: 113.
1886. " Mem. Bost. soc. nat. hist., iii: 465–466. *Pl.* 47, *fig.* 1.
1890. " Foss. ins. N. A., i: 357–358. *Pl.* 21, *fig.* 1.
See also Blattidium kneri.

705. **Elisama? media.** (Blattariæ.)

Locality: Schambelen, Switzerland. Horizon: Lias.

1886.	Scudder.	Mem. Bost. soc. nat. hist., iii: 468.
1890.	"	Foss. ins. N. A., i: 360.

See also Blattidium medium.

706. **Elisama minor.** (Blattariæ.)

Locality: England. Horizon: Wealden.

1845.	Brodie.	Foss. ins. sec. rocks Engl., 118 (unnamed). *Pl.* 5, *fig.* 20.
1856.	Giebel.	Insect. d. vorwelt, 320.
1877.	Goldenberg.	Fauna saræp. foss., ii: 21.
1885.	Scudder.	Proc. acad. nat. sc. Philad., 1885: 113.
1886.	"	Mem. Bost. soc. nat. hist., iii: 466. *Pl.* 47, *fig.* 13.
1890.	"	Foss. ins. N. A., i: 358. *Pl.* 21, *fig.* 13.

See also Blattidium minor.

707. **Elisama molossus.** (Blattariæ.)

Locality: Durdlestone Bay, England. Horizon: Middle Purbecks.

1886.	Scudder.	Mem. Bost. soc. nat. hist., iii: 464–465.
1890.	"	Foss. ins. N. A., i: 356–357.

See also Blattidium molossus, Nethania molossus.

708. **Elisama? ramificata.** (Blattariæ.)

Locality: Durdlestone Bay, England. Horizon: Middle Purbecks.

1886.	Scudder.	Mem. Bost. soc. nat. hist., iii: 483.
1890.	"	Foss. ins. N. A., i: 375.

See also Rithma ramificata, Blattidium ramificatum.

709. **Etoblattina ———.** (Palæoblattariæ.)

Locality: Fairplay, Colo. Horizon: Trias.

1883.	Scudder.	Proc. Bost. soc. nat. hist., xxii: 59.
1884.	"	Amer. journ. sc., (3), xxviii: 200.
1890.	"	Mem. Bost. soc. nat. hist., iv: 460. *Pl.* 42, *fig.* 20.
1890.	"	Foss. ins. N. A., i: 436. *Pl.* 34, *fig.* 20.

See also E. persistens.

710. **Etoblattina persistens.** (Palæoblattariæ.)

Locality, Fairplay, Colo. Horizon: Trias.

1890.	Scudder.	Mem. Bost. soc. nat. hist., iv: 459–460. *Pl.* 41, *fig.* 7; *pl.* 42, *figs.* 10, 19.
1890.	"	Foss. ins. N. A., i: 435–436. *Pl.* 33, *fig.* 7; *pl.* 34, *figs.* 10, 19.

See also Etoblattina ———.

711. **Forficularia problematica.** (Forficulariæ.)

Locality: Solenhofen, Bavaria. Horizon: Jura.

1869.	Weyenbergh.	Arch. mus. Teyl., ii: 274–275. *Pl.* 36, *figs.* 25, 26, 26*a*.
1869.	"	Ins. foss. calc. lithogr., 28–29. *Pl.* 3, *figs.* 25, 26, 26*a*.
1869.	"	Tijdschr. v. ent., (2), iv: 234 [134].
1874.	"	Periód. zool., i: 97.
1874.	"	Énum. syst. faune ent. mésoz., 11.

712. Gomphocerites bernstorffi. (Acridii.)

Locality: Dobbertin, Mecklenburg. **Horizon**: Lower Jura.

1880.	E. Geinitz.	Zeitschr. deutsch. geol. gesellsch., 1880: 521–522. *Pl.* 22, *fig.* 4.
1884.	"	Zeitschr. deutsch. geol. gesellsch., 1884: 572.

713. Gomphocerites bucklandi. (Acridii.)

Locality: Schambelen, Switzerland. **Horizon**: Lias.

1852.	Heer.	Lias-insel Aargau, 15. *Pl.*, *fig.* 43.
1854.	Pictet.	Traité paléont., 2ᵉ éd., ii: 365. *Pl.* 40, *fig.* 5.
1856.	Giebel.	Insect. d. vorwelt., 498.
1865.	Heer.	Urwelt der Schweiz, 84, 95. *Pl.* 7, *figs.* 2–3.
1872.	"	Monde prim. Suisse, 102, 116. *Pl.* 7, *figs.* 2, 3.
1876.	"	Prim. world Switz., i: 84, 94. *Pl.* 7, *figs.* 2, 3.
1879.	"	Urwelt der Schweiz, 2ᵉ aufl., 94, 105. *Pl.* 7, *figs.* 2, 3.

See also Gryllus bucklandi, etc.

714. Gryllacris propinqua. (Locustariæ.)

Locality: Eichstadt, Bavaria. **Horizon**: Jura.

1886.	Deichmüller.	Ins. lith. schichten dresd. mus., 26. *Pl.* 2, *figs.* 9, 10.

715. Gryllacris schlieffeni. (Locustariæ.)

Locality: Dobbertin, Mecklenburg. **Horizon**: Lias.

1884.	E. Geinitz.	Zeitschr. deutsch. geol. gesellsch., 1884: 580–581. *Pl.* 13, *fig.* 24.

716. Gryllidium oweni. (Acridii?)

Locality: Durdlestone Bay, England. **Horizon**: Lower Purbecks.

1854.	Westwood.	Quart. journ. geol. soc. Lond., x: 387, 395. *Pl.* 17, *fig.* 19.
1856.	Giebel.	Insect. d. vorwelt, 301.
1886.	Deichmüller.	Ins. lith. schichten dresd. mus., 13 (near Chresmoda).

717. Gryllites? dubius. (Gryllides.)

Locality: Solenhofen, Bavaria. **Horizon**: Jura.

1842.	Germar.	Münst., Beitr. z. petref., v: 82–83. *Pl.* 9, *fig.* 3; *pl.* 13, *fig.* 8.
1852.	Giebel.	Deutschl. petref., 638.
1862.	Hagen.	Palaeontogr., x: 111 (not a Gryllus).
1869.	Weyenbergh.	Arch. mus. Teyl., ii: 275 (a Blatta?).
1869.	"	Ins. foss. calc. lithogr., 29 (a Blatta?).
1869.	"	Tijdschr. v. ent., (2), iv: 234 [134].
1874.	"	Periód. zool., i: 98.
1874.	"	Énum. syst. faune ent. mésoz., 12.
1877.	Assmann.	Ber. versamml. deutsch. naturf., l: 192 (a Cicada).

718. Gryllus ———. (Locustariæ.)

Locality: Aust, England. **Horizon**: Rhætic.

1873.	Brodie.	Distr. corr. foss. ins., 17.

719. Gryllus ———. (Locustariæ.)

Locality: Aust, England. **Horizon**: Lower Lias.

1845.	Westwood.	Brodie, Foss. ins. sec. rocks Engl., 125. *Pl.* 9, *fig.* 14.
1856.	Giebel.	Insect. d. vorwelt, 309.

720. **Gryllus bucklandi.** (Acridii.)

Locality: Grafton, Warwickshire, England. Horizon: Lower Lias.

1845. Brodie. Foss. ins. sec. rocks Engl., 76, 96, 101. *Pl.* 7, *fig.* 16.
1871. Phillips. Geology of Oxford, 123.
See also Gomphocerites bucklandi, Œdipoda bucklandi.

721. **Gryllus dobbertinensis.** (Gryllides?)

Locality: Dobbertin, Mecklenburg. Horizon: Lower Jura.

1880. E. Geinitz. Zeitschr. deutsch. geol. gesellsch., 1880: 523. *Pl.* 22, *fig.* 6.
1884. " Zeitschr. deutsch. geol. gesellsch., 1884: 572.
1885. Scudder. Zittel, Handb. palaeont., i, th. ii: 770.
1886. " Zittel-Barrois, Traité de paléont., ii: 770.
1885. " Bull. U. S. geol. surv., No. 31: 50.

722. **Gryllus gryllotalpa** (recent). (Gryllides.)

Locality: Solenhofen, Bavaria. Horizon: Jura.

1783. Esper. De anim. ovip., 18–19.
1784. Schröter. Neue litt. u. beytr., i: 411 (unnamed).

723. **Gryllus sedgwicki.** (Gryllides.)

Locality: England. Horizon: Purbecks.

1856. Giebel. Insect. d. vorwelt, 300–301.
See also Acheta sedgwicki.

724. **Halometra gigantea.** (Acridii.)

Locality: Solenhofen, Bavaria. Horizon: Jura.

1888. Oppenheim. Palaeontogr., xxxiv: 230–233. *Pl.* 31, *fig.* 18.
See also Chresmoda obscura, etc.

725. **Halometra? minor.** (Acridii.)

Locality: Eichstadt, Bavaria. Horizon: Jura.

1888. Oppenheim. Palaeontogr., xxxiv: 233. *Pl.* 31, *fig.* 4.

726. **Humbertiella grandis.** (Mantides.)

Compared with H. ceylonica Sauss.

Locality: Ust Balei, Siberia. Horizon: Lias.

1889. {Brauer-Redtenb.-Ganglb.} Mém. acad. sc. St.-Pétersb., (7), xxxvi, No. 15: 13. *Pl.* [2], *fig.* 16.

727. **Ledrophora girardi.** (Blattariæ.)

Locality: Trebitz, Saxony. Horizon: Buntensandstein.

1864. Heer. Viert. naturf. gesellsch. Zürich, ix. *Pl.*, *fig.* 5.
1879. Scudder. Mem. Bost. soc. nat. hist., iii: 19.
1880. " Arch. sc. phys. nat., (3), iii: 367.
1890. " Foss. ins. N. A., i: 39.
See also Legnophora girardi.

728. **Legnophora girardi.** (Blattariæ.)

Locality: Trebitz, Saxony. Horizon: Buntensandstein.

1864. Heer. Viert. naturf. gesellsch. Zürich, ix: 288, 297–299 (on pl. Ledrophora). *Pl.*, *fig.* 5.

1872.	Heer.	Monde prim. Suisse, 99.
1877.	Goldenberg.	Fauna saræp. foss., ii : 20 (Lognophora).
1885.	Scudder.	Zittel, Handb. palaeont., i, th. ii : 766.
1886.	"	Zittel-Barrois, Traité de paléont., ii : 766.
1886.	"	Bull. U. S. geol. surv., No. 31 : 47.

See also Ledrophora girardi.

729. **Locusta ? ———.** (Locustariæ.)

Locality : Strensham, England. Horizon : Lower Lias.

1873.	Brodie.	Distr. corr. foss. ins., 16.

730. **Locusta ———.** (Locustariæ.)

Locality : Solenhofen, Bavaria. Horizon : Jura.

1834.	Keferstein.	Naturf. erdkörp., ii : 332 (teste Münster).

731. **Locusta ? amanda.** (Locustariæ.)

Locality : Solenhofen or Eichstadt, Bavaria. Horizon : Jura.

1862.	Hagen.	Palaeontogr., x : 144–145. *Pl.* 15, *fig.* 4.
1869.	Weyenbergh.	Tijdschr. v. ent., (2), iv : 234 (134).
1885.	Scudder.	Zittel, Handb. palaeont., i, th. ii : 769. *Fig.* 968.
1886.	"	Zittel-Barrois, Traité de paléont., ii : 769. *Fig.* 985.

See also Elcana amanda, Elcana (Locusta) amanda; also II, DIPTERA, Asilicus lithophilus.

732. **Locusta prisca.** (Locustariæ.)

Locality : Solenhofen, Bavaria. Horizon : Jura.

1839.	Münster.	MSS.
1839.	Germar.	Verhandl. leop.-carol. akad. naturf., xix : 200–201. *Pl.* 21, *fig.* 3.
1856.	Giebel.	Insect. d. vorwelt, 303.
1862.	Hagen.	Palaeontogr., x : 110.
1869.	Weyenbergh.	Tijdschr. v. ent., (2), iv : 234 [134].
1877.	Assmann.	Ber. versamml. deutsch. naturf., l : 192.

See also Chresmoda obscura, etc.

733. **Locusta speciosa.** (Locustariæ.)

Locality : Solenhofen, Bavaria. Horizon : Jura.

1839.	Münster.	MSS.
1839.	Germar.	Verhandl. leop.-carol. akad. naturf., xix : 198–200. *Pl.* 21, *figs.* 1–2.
1852.	Giebel.	Deutschl. petref., 637.
1862.	Hagen.	Palaeontogr., x : 110.
1863.	Winkler.	Cat. syst. coll. pal. mus. Teyl., 425.
1869.	Weyenbergh.	Arch. mus. Teyl., ii : 276–277. *Pl.* 36, *figs.* 30–31.
1869.	"	Ins. foss. calc. lithogr., 30–31. *Pl.* 3, *figs.* 30–31.
1869.	"	Tijdschr. v. ent., (2), iv : 234 [134].
1874.	"	Périód. zool., i : 98.
1874.	"	Énum. syst. faune ent. mésoz., 12.
1877.	Assmann.	Ber. versamml. deutsch. naturf., l : 192.
1885.	Scudder.	Zittel, Handb. palaeont., i, th. ii : 769. *Fig.* 967.
1886.	"	Zittel-Barrois, Traité de paléont., ii : 769. *Fig.* 984.
1886.	"	Bull. U. S. geol. surv., No. 31 : 50.

See also Decticus speciosus, Pycnophlebia speciosa Pycnophlebia (Locusta) speciosa; cf. also III, ORTHOPT., Decticus speciosus.

Lognophora girardi. See Legnophora girardi.

734. Mesoblattina ——. (Blattariæ.)

Locality: England. Horizon: Purbecks.

1886. Scudder. Mem. Bost. soc. nat. hist., iii: 453. *Pl.* 46, *fig.* 3.
1890. " Foss. ins. N. A., i: 345. *Pl.* 20, *fig.* 3.

735. Mesoblattina ——. (Blattariæ.)

Locality: England. Horizon: Jura.

1886. Scudder. Mem. Bost. soc. nat. hist., iii: 453. *Pl.* 46, *fig.* 13.
1890. " Foss. ins. N. A., i: 345. *Pl.* 20, *fig.* 13.

736. Mesoblattina angustata. (Blattariæ.)

Locality: Schambelen, Switzerland. Horizon: Lias.

1885. Scudder. Proc. acad. nat. sc. Philad., 1885: 114.
1885. " Zittel, Handb. palaeont., i, th. ii: 767. *Fig.* 963.
1886. " Zittel-Barrois, Traité de paléont., ii: 767. *Fig.* 979.
1886. " Mem. Bost. soc. nat. hist., iii: 462.
1890. " Foss. ins. N. A., i: 354.
See also Blattina angustata, etc.

737. Mesoblattina antiqua. (Blattariæ.)

Locality: Durdlestone Bay, England. Horizon: Lower Purbecks.

1885. Scudder. Proc. acad. nat. sc. Philad., 1885: 115.
1886. " Mem. Bost. soc. nat. hist., iii: 463.
1890. " Foss. ins. N. A., i: 355.
See also Rithma antiqua, etc.

738. Mesoblattina bensoni. (Blattariæ.)

Locality: Dumbleton, England. Horizon: Upper Lias.

1886. Scudder. Mem. Bost. soc. nat. hist., iii: 453–454. *Pl.* 46, *fig.* 17.
1890. " Foss. ins. N. A., i: 345–346. *Pl.* 20, *fig.* 17.

739. Mesoblattina blakei. (Blattariæ.)

Locality: Alderton, England. Horizon: Upper Lias.

1886. Scudder. Mem. Bost. soc. nat. hist., iii: 452. *Pl.* 46, *fig.* 12.
1890. " Foss. ins. N. A., i: 344–345. *Pl.* 20, *fig.* 12.

740. Mesoblattina brodiei. (Blattariæ.)

Locality: England. Horizon: Purbecks.

1886. Scudder. Mem. Bost. soc. nat. hist., iii: 459–460. *Pl.* 47, *fig.* 7.
1886. " Miall, Cockroach, 216. *Fig.* 123.
1890. " Foss. ins. N. A., i: 351–352. *Pl.* 21, *fig.* 7.

741. Mesoblattina bucklandi. (Blattariæ.)

Locality: England. Horizon: Purbecks?

1886. Scudder. Mem. Bost. soc. nat. hist., iii: 457–458. *Pl.* 47, *fig.* 2.
1890. " Foss. ins. N. A., i: 349–350. *Pl.* 21, *fig.* 2.

742. Mesoblattina dobbertinensis. (Blattariæ.)

Locality: Dobbertin, Mecklenburg. Horizon: Lias.

1885. Scudder. Proc. acad. nat. sc. Philad., 1885: 115.
1886. " Mem. Bost. soc. nat. hist., iii: 455.
1890. " Foss. ins. N. A., i: 347.
See also Blattina (Mesoblattina) dobbertinensis.

743. Mesoblattina elongata. (Blattariæ.)

Locality: Durdlestone Bay, England. **Horizon**: Middle Purbecks.

1885. Scudder. Proc. acad. nat. sc. Philad., 1885: 115.
1886. " Mem. Bost. soc. nat. hist., iii: 458.
1890. " Foss. ins. N. A., i: 350.

See also Blattidium elongatum, etc.

744. Mesoblattina geikiei. (Blattariæ.)

Locality: Brown's Wood, Moreton Bagot, England. **Horizon**: Lias.

1886. Scudder. Mem. Bost. soc. nat. hist., iii: 454–455. *Pl.* 46, *fig.* 9.
1890. " Foss. ins. N. A., i: 346–347. *Pl.* 20, *fig.* 9.

745. Mesoblattina higginsii. (Blattariæ.)

Locality: England. **Horizon**: Purbecks.

1886. Scudder. Mem. Bost. soc. nat. hist., iii: 455–456. *Pl.* 47, *fig.* 14.
1890. " Foss. ins. N. A., i: 347–348. *Pl.* 21, *fig.* 14.

746. Mesoblattina hopei. (Blattariæ.)

Locality: England. **Horizon**: Purbecks.

1886. Scudder. Mem. Bost. soc. nat. hist., iii: 461. *Pl.* 47, *fig.* 11.
1890. " Foss. ins. N. A., i: 353. *Pl.* 21, *fig.* 11.

747. Mesoblattina lithophila. (Blattariæ.)

Locality: Solenhofen, Bavaria. **Horizon**: Jura.

1886. Scudder. Mem. Bost. soc. nat. hist., iii: 464.
1886. Deichmüller. Ins. lith. schichten dresd. mus., 6–9. *Pl.* 1, *figs.* 1–6.
1888. Oppenheim. Palaeontogr., xxxiv: 221. *Pl.* 30, *figs.* 6, 8.
1890. Scudder. Foss. ins. N. A., i: 356.

See also Musca lithophila, etc.

748. Mesoblattina mantelli. (Blattariæ.)

Locality: England. **Horizon**: Purbecks.

1886. Scudder. Mem. Bost. soc. nat. hist., iii: 460–461. *Pl.* 47, *fig.* 9.
1890. " Foss. ins. N. A., i: 352–353. *Pl.* 21, *fig.* 9.

749. Mesoblattina mathildæ. (Blattariæ.)

Locality: Dobbertin, Mecklenburg. **Horizon**: Jura.

1886. Scudder. Mem. Bost. soc. nat. hist., iii: 462–463.
1890. " Foss. ins. N. A., i: 354–355.

See also Blattina mathildæ.

750. Mesoblattina murchisoni. (Blattariæ.)

Locality: Durdlestone Bay, England. **Horizon**: Lower Purbecks.

1885. Scudder. Proc. acad. nat. sc. Philad., 1885: 113, 115.
1886. " Mem. Bost. soc. nat. hist., iii: 456–457. *Pl.* 47. *fig.* 5.
1890. " Foss. ins. N. A., i: 348–349. *Pl.* 21, *fig.* 5.

See also Rithma murchisoni, etc.

751. Mesoblattina murrayi. (Blattariæ.)

Locality: England. **Horizon**: Purbecks.

1836. Scudder. Mem. Bost. soc. nat. hist., iii: 458–459. *Pl.* 47, *fig.* 4.
1890. " Foss. ins. N. A., i: 350–351. *Pl.* 21, *fig.* 4.

734. Mesoblattina ——. (Blattariæ.)

Locality: England. Horizon: Purbecks.

1886. Scudder. Mem. Bost. soc. nat. hist., iii: 453. *Pl.* 46, *fig.* 3.
1890. " Foss. ins. N. A., i: 345. *Pl.* 20, *fig.* 3.

735. Mesoblattina ——. (Blattariæ.)

Locality: England. Horizon: Jura.

1886. Scudder. Mem. Bost. soc. nat. hist., iii: 453. *Pl.* 46, *fig.* 13.
1890. " Foss. ins. N. A., i: 345. *Pl.* 20, *fig.* 13.

736. Mesoblattina angustata. (Blattariæ.)

Locality: Schambelen, Switzerland. Horizon: Lias.

1885. Scudder. Proc. acad. nat. sc. Philad., 1885: 114.
1885. " Zittel, Handb. palaeont., i, th. ii: 767. *Fig.* 963.
1886. " Zittel-Barrois, Traité de paléont., ii: 767. *Fig.* 979.
1886. " Mem. Bost. soc. nat. hist., iii: 462.
1890. " Foss. ins. N. A., i: 354.
See also Blattina angustata, etc.

737. Mesoblattina antiqua. (Blattariæ.)

Locality: Durdlestone Bay, England. Horizon: Lower Purbecks.

1885. Scudder. Proc. acad. nat. sc. Philad., 1885: 115.
1886. " Mem. Bost. soc. nat. hist., iii: 463.
1890. " Foss. ins. N. A., i: 355.
See also Rithma antiqua, etc.

738. Mesoblattina bensoni. (Blattariæ.)

Locality: Dumbleton, England. Horizon: Upper Lias.

1886. Scudder. Mem. Bost. soc. nat. hist., iii: 453–454. *Pl.* 46, *fig.* 17.
1890. " Foss. ins. N. A., i: 345–346. *Pl.* 20, *fig.* 17.

739. Mesoblattina blakei. (Blattariæ.)

Locality: Alderton, England. Horizon: Upper Lias.

1886. Scudder. Mem. Bost. soc. nat. hist., iii: 452. *Pl.* 46, *fig.* 12.
1890. " Foss. ins. N. A., i: 344–345. *Pl.* 20, *fig.* 12.

740. Mesoblattina brodiei. (Blattariæ.)

Locality: England. Horizon: Purbecks.

1886. Scudder. Mem. Bost. soc. nat. hist., iii: 459–460. *Pl.* 47, *fig.* 7.
1886. " Miall, Cockroach, 216. *Fig.* 123.
1890. " Foss. ins. N. A., i: 351–352. *Pl.* 21, *fig.* 7.

741. Mesoblattina bucklandi. (Blattariæ.)

Locality: England. Horizon: Purbecks?

1886. Scudder. Mem. Bost. soc. nat. hist., iii: 457–458. *Pl.* 47, *fig.* 2.
1890. " Foss. ins. N. A., i: 349–350. *Pl.* 21, *fig.* 2.

742. Mesoblattina dobbertinensis. (Blattariæ.)

Locality: Dobbertin, Mecklenburg. Horizon: Lias.

1885. Scudder. Proc. acad. nat. sc. Philad., 1885: 115.
1886. " Mem. Bost. soc. nat. hist., iii: 455.
1890. " Foss. ins. N. A., i: 347.
See also Blattina (Mesoblattina) dobbertinensis.

743. **Mesoblattina elongata.** (Blattariæ.)

Locality: Durdlestone Bay, England. Horizon: Middle Purbecks.

1885. Scudder. Proc. acad. nat. sc. Philad., 1885: 115.
1886. " Mem. Bost. soc. nat. hist., iii: 458.
1890. " Foss. ins. N. A., i: 350.

See also Blattidium elongatum, etc.

744. **Mesoblattina geikiei.** (Blattariæ.)

Locality: Brown's Wood, Moreton Bagot, England. Horizon: Lias.

1886. Scudder. Mem. Bost. soc. nat. hist., iii: 454–455. *Pl.* 46, *fig.* 9.
1890. " Foss. ins. N. A., i: 346–347. *Pl.* 20, *fig.* 9.

745. **Mesoblattina higginsii.** (Blattariæ.)

Locality: England. Horizon: Purbecks.

1886. Scudder. Mem. Bost. soc. nat. hist., iii: 455–456. *Pl.* 47, *fig.* 14.
1890. " Foss. ins. N. A., i: 347–348. *Pl.* 21, *fig.* 14.

746. **Mesoblattina hopei.** (Blattariæ.)

Locality: England. Horizon: Purbecks.

1886. Scudder. Mem. Bost. soc. nat. hist., iii: 461. *Pl.* 47, *fig.* 11.
1890. " Foss. ins. N. A., i: 353. *Pl.* 21, *fig.* 11.

747. **Mesoblattina lithophila.** (Blattariæ.)

Locality: Solenhofen, Bavaria. Horizon: Jura.

1886. Scudder. Mem. Bost. soc. nat. hist., iii: 464.
1886. Deichmüller. Ins. lith. schichten dresd. mus., 6–9. *Pl.* 1, *figs.* 1–6.
1888. Oppenheim. Palaeontogr., xxxiv: 221. *Pl.* 30, *figs.* 6, 8.
1890. Scudder. Foss. ins. N. A., i: 356.

See also Musca lithophila, etc.

748. **Mesoblattina mantelli.** (Blattariæ.)

Locality: England. Horizon: Purbecks.

1886. Scudder. Mem. Bost. soc. nat. hist., iii: 460–461. *Pl.* 47, *fig.* 9.
1890. " Foss. ins. N. A., i: 352–353. *Pl.* 21, *fig.* 9.

749. **Mesoblattina mathildæ.** (Blattariæ.)

Locality: Dobbertin, Mecklenburg. Horizon: Jura.

1886. Scudder. Mem. Bost. soc. nat. hist., iii: 462–463.
1890. " Foss. ins. N. A., i: 354–355.

See also Blattina mathildæ.

750. **Mesoblattina murchisoni.** (Blattariæ.)

Locality: Durdlestone Bay, England. Horizon: Lower Purbecks.

1885. Scudder. Proc. acad. nat. sc. Philad., 1885: 113, 115.
1886. " Mem. Bost. soc. nat. hist., iii: 456–457. *Pl.* 47. *fig.* 5.
1890. " Foss. ins. N. A., i: 348–349. *Pl.* 21, *fig.* 5.

See also Rithma murchisoni, etc.

751. **Mesoblattina murrayi.** (Blattariæ.)

Locality: England. Horizon: Purbecks.

1836. Scudder. Mem. Bost. soc. nat. hist., iii: 458–459. *Pl.* 47, *fig.* 4.
1890. " Foss. ins. N. A., i: 350–351. *Pl.* 21, *fig.* 4.

752. Mesoblattina peachii. (Blattariæ.)

Locality: England. Horizon: Purbecks.

1886. Scudder. Mem. Bost. soc. nat. hist., iii: 461–462. *Pl.* 47, *fig.* 10.
1890. “ Foss. ins. N. A., i: 353–354. *Pl.* 21, *fig.* 10.

753. Mesoblattina protypa. (Blattariæ.)

Locality: Dobbertin, Mecklenburg. Horizon: Lower Jura.

1885. Scudder. Proc. acad. nat. sc. Philad., 1885: 114.
1886. “ Mem. Bost. soc. nat. hist., iii: 458.
1890. “ Foss. ins. N. A., i: 350.

See also Blattina (Mesoblattina) protypa.

Mesoblattina sibirica. See Blattina (Mesoblattina) sibirica.

754. Mesoblattina swintoni. (Blattariæ.)

Locality: England. Horizon: Purbecks.

1886. Scudder. Mem. Bost. soc. nat hist., iii: 454. *Pl.* 46, *fig.* 10.
1890. “ Foss. ins. N. A., i: 346. *Pl.* 20, *fig.* 10.

755. Musca lithophila. (Blattariæ.)

Locality: Solenhofen, Bavaria. Horizon: Jura.

1839. Germar. Verhandl. leop.-carol. akad. naturf., xix: 222. *Pl.* 23, *fig.* 19.
1852. Giebel. Deutschl. petref., 643.
1856. “ Insect. d. vorwelt, 198.
1862. Hagen. Palaeontogr, x: 111 (indeterminable).
1863. Winkler. Cat. syst. coll. pal. mus. Teyl., 422.
1869. Weyenbergh. Arch. mus. Teyl., ii: 256–257. *Pl.* 34, *fig.* 2.
1869. “ Ins. foss. calc. lithogr., 10–11. *Pl.* 1, *fig.* 2.
1869. “ Tijdschr. v. ent., (2), iv: 237.
1874. “ Perioód. zool., i: 90.
1874. “ Énum. syst. fauna ent. mésoz., 4.
1877. Assmann. Ber. versamml. deutsch. naturf., 1: 192 (= **Blattidium beroldingianum**).
1885. Scudder. Zittel, Handb. palaeont., i, th. ii: 806.
1886. “ Zittel-Barrois, Traité de paléont., ii: 806.
1886. “ Bull. U. S. geol. surv., No. 31: 86.

See also Blattidium beroldingianum, Mesoblattina lithophila, **Blabera avita**, **Blattidium avitum**.

756. Nannoblattina prestwichii. (Blattariæ.)

Locality: England. Horizon: Purbecks.

1886. Scudder. Mem. Bost. soc. nat. hist., iii: 475. *Pl.* 48, *fig.* 3.
1890. “ Foss. ins. N. A., i: 367. *Pl.* 22, *fig.* 3.

757. Nannoblattina similis. (Blattariæ.)

Locality: Vale of Wardour, England. Horizon: Purbecks.

1886. Scudder. Mem. Bost. soc. nat. hist., iii: 475.
1890. “ Foss. ins. N. A., i: 367.

See also Blattina similis, etc.

758. Nannoblattina woodwardi. (Blattariæ.)

Locality: Wiltshire, England. Horizon: Purbecks.

1886. Scudder. Mem. Bost. soc. nat. hist., iii: 476. *Pl.* 48, *fig.* 6.
1890. “ Foss. ins. N. A., i: 368. *Pl.* 22, *fig.* 6.

759. Neorthroblattina albolineata. (Blattariæ.)

Locality: Fairplay, Colo. Horizon: Trias.

1885.	Scudder.	Proc. acad. nat. sc. Philad., 1885: 109.
1886.	"	Mem. Bost. soc. nat. hist., iii: 444.
1890.	"	Mem. Bost. soc. nat. hist., iv: 467. *Pl.* 42, *figs.* 2, 18.
1890.	"	Foss. ins. N. A., i: 336, 443. *Pl.* 34, *figs.* 2, 18.

760. Neorthroblattina attenuata. (Blattariæ.)

Locality: Fairplay, Colo. Horizon: Trias.

1885.	Scudder.	Proc. acad. nat. sc. Philad., 1885: 110.
1886.	"	Mem. Bost. soc. nat. hist., iii: 444.
1890.	"	Mem. Bost. soc. nat. hist., iv: 467, 468–469. *Pl.* 42, *fig.* 1.
1890.	"	Foss. ins. N. A., i: 336, 443, 444–445. *Pl.* 34, *fig.* 1.

761. Neorthroblattina lakesii. (Blattariæ.)

Locality: Fairplay, Colo. Horizon: Trias.

1885.	Scudder.	Proc. acad. nat. sc. Philad., 1885: 109.
1886.	"	Mem. Bost. soc. nat. hist., iii: 444.
1886.	"	Miall, Cockroach, 214. *Fig.* 122.
1890.	"	Mem. Bost. soc. nat. hist., iv: 467, 468. *Pl.* 42, *figs.* 9, 15.
1890.	"	Foss. ins. N. A., i: 336, 443, 444. *Pl.* 34, *figs.* 9, 15.

762. Neorthroblattina rotundata. (Blattariæ.)

Locality: Fairplay, Colo. Horizon: Trias.

1885.	Scudder.	Proc. acad. nat. sc. Philad., 1885: 109–110.
1885.	"	Zittel, Handb., palaeont., i, ii: 766. *Fig.* 960.
1886.	"	Zittel-Barrois, Traité de paléont., ii: 766. *Fig.* 976.
1886.	"	Mem. Bost. soc. nat. hist., iii: 444.
1890.	Lesley.	Dict. foss. Penns., ii: 449. *Fig.*
1890.	Scudder.	Mem. Bost. soc. nat. hist., iv: 467, 468. *Pl.* 42, *figs.* 7, 8.
1890.	"	Foss. ins. N. A., i: 336, 443, 444. *Pl.* 34, *figs.* 7, 8.

763. Nethania molossus. (Blattariæ.)

Locality: Durdlestone Bay, England. Horizon: Middle Purbecks.

1856.	Giebel.	Insect. d. vorwelt, 321.

See also Blattidium molossus, Elisama molossus.

764. Œdipoda bucklandi. (Acridii.)

Locality: Grafton, England. Horizon: Lower Lias.

1856.	Giebel.	Insect. d. vorwelt, 309.

See also Gryllus bucklandi, etc.

765. Panorpidium ———. (Locustariæ.)

Locality: Dobbertin, Mecklenburg. Horizon: Jura

1883.	E. Geinitz.	Flötzform. Mecklenb., 31 (undescr.).

766. Panorpidium tessellatum.

Locality: Durdlestone Bay, England. Horizon: Lower Purbecks.

1854.	Westwood.	Quart. journ. geol. soc. Lond., x: 384, 394. *Pl.* 15, *fig.* 17.

See also Clathrotermes (Elcana) geinitzi, etc.; also II, NEUROPT., Panorpidium tessellatum var.

767. Parapleurites gracilis. (Acridii.)

Locality: Ust Balei, Siberia. Horizon: Lias.

1889.	Brauer-Redtenb.-Ganglb.	Mém. acad. sc. St.-Pétersb., (7), xxxvi, No. 15: 13. *Pl.* [2], *fig.* 17.

768. Periplaneta maculata. (Blattariæ.)

Compared with P. australasiæ, etc.

Locality: Ust Balei, Siberia. Horizon: Lias.

1889.	Brauer-Redtenb.-Ganglb.	Mém. acad. sc. St.-Pétersb., (7), xxxvi, No. 15: 12. *Pl.* [2], *fig.* 14.

769. Petrablattina æqua. (Palæoblattariæ.)

Locality: Fairplay, Colo. Horizon: Trias.

1885.	Scudder.	Proc. acad. nat. sc. Philad., 1885: 38.
1890.	Lesley.	Dict. foss. Penns., ii: 626.
1890.	Scudder.	Mem. Bost. soc. nat. hist., iv: 465. *Pl.* 42, *fig.* 13.
1890.	"	Foss. ins. N. A., i: 441. *Pl.* 34, *fig.* 13.

770. Petrablattina meieri. (Palæoblattariæ.)

Locality: Fairplay, Colo. Horizon: Trias.

1885.	Scudder.	Proc. acad. nat. sc. Philad., 1885: 38.
1890.	Lesley.	Dict. foss. Penns., ii: 627.
1890.	Scudder.	Mem. Bost. soc. nat. hist., iv: 465. *Pl.* 42, *fig.* 17.
1890.	"	Foss. ins. N. A., i: 441. *Pl.* 34, *fig.* 17.

771. Phaneroptera germari. (Locustariæ.)

Locality: Solenhofen, Bavaria. Horizon: Jura.

1842.	Münster.	MSS.
1842.	Germar.	Münster, Beitr. z. petref., v: 81–82. *Pl.* 9, *fig.* 2; *Pl.* 13, *fig.* 7.
1852.	Giebel.	Deutschl. petref., 637.
1854.	Pictet.	Traité paléont., 2e éd., ii: 366. *Pl.* 40, *fig.* 10.
1856.	Giebel.	Insect. d. vorwelt, 303.
1862.	Hagen.	Palaeontogr., x: 111.
1869.	Weyenbergh.	Arch. mus. Teyl., ii: 275.
1869.	"	Ins. foss. calc. lithogr., 29.
1869.	"	Tijdschr. v. ent., (2), 4: 234 [134].
1874.	"	Périód. zool., i: 98.
1874.	"	Énum. syst. faune ent. mésoz., 12.
1877.	Assmann.	Ber. versamml. deutsch. naturf., l: 192.
1885.	Scudder.	Zittel, Handb. palaeont., i, th. ii: 768.
1886.	"	Zittel-Barrois, Traité de paléont., ii: 769.
1886.	Deichm.	Ins. lith. schichten dresd. mus., 19–20. *Pl.* 2, *fig.* 11.

772. Phaneroptera striata. (Locustariæ.)

Locality: Solenhofen, Bavaria. Horizon: Jura.

1869.	Weyenbergh.	Arch. mus. Teyl., ii: 275–276. *Pl.* 36, *fig.* 28.
1869.	"	Ins. foss. calc. lithogr., 29–30. *Pl.* 3, *fig.* 28.
1869.	"	Tijdschr. v. ent., (2), iv: 234 [134].
1874.	"	Périód. zool., i: 98.
1874.	"	Énum. syst. faune ent. mésoz., 12.

773. **Poroblattina arcuata.** (Palæoblattariæ.)

Locality: Fairplay, Colo. Horizon: Trias.

1885. Scudder. Proc. acad. nat. sc. Philad., 1885: 39.
1890. Lesley. Dict. foss. Penns., ii: 737.
1890. Scudder. Mem. Bost. soc. nat. hist., iv: 466. *Pl.* 41, *fig.* 5.
1890. " Foss. ins. N. A., i: 442. *Pl.* 33, *fig.* 5.

774. **Poroblattina lakesii.** (Palæoblattariæ.)

Locality: Fairplay, Colo. Horizon: Trias.

1885. Scudder. Proc. acad. nat. sc. Philad., 1885: 39.
1885. " Zittel, Handb. palaeont., i, ii: 755. *Fig.* 936.
1886. " Zittel-Barrois, Traité de paléont., ii: 755. *Fig.* 952.
1890. Lesley. Dict. foss. Penns., ii: 737. *Fig.*
1890. Scudder. Mem. Bost. soc. nat. hist., iv: 466. *Pl.* 41, *fig.* 11.
1890. " Foss. ins. N. A., i: 442. *Pl.* 33, *fig.* 11.

775. **Propygolampis bronni.** (Acridii.)

Locality: Solenhofen, Bavaria. Horizon: Jura.

1874. Weyenbergh. Periód. zool., i: 84–85, 99. *Pl.* 3, *fig.* 3.
1874. " Énum. syst. faune ent. mésoz., 13.
See also Chresmoda obscura, etc.

776. **Pterinoblattina binneyi.** (Blattariæ.)

Locality: Durdlestone Bay, England. Horizon: Lower Purbecks.

1854. Westwood. Quart. journ. geol. soc. Lond., x: 390, 396 (no name). *Pl.* 18, *fig.* 42.
1886. Scudder. Mem. Bost. soc. nat. hist., iii: 473.
1890. " Foss. ins. N. A., i: 365.

777. **Pterinoblattina chrysea.** (Blattariæ.)

Locality: Dobbertin, Germany. Horizon: Lias.

1885. Scudder. Proc. acad. nat. sc. Philad., 1885: 106–107.
1886. " Mem. Bost. soc. nat. hist., iii: 470–471.
1890. " Foss. ins. N. A., i: 362–363.
See also Blattina chrysea.

778. **Pterinoblattina curtisii.** (Blattariæ.)

Locality: Alderton, England. Horizon: Upper Lias.

1886. Scudder. Mem. Bost. soc. nat. hist., iii: 471. *Pl.* 48, *fig.* 16.
1890. " Foss. ins. N. A., i: 363. *Pl.* 22, *fig.* 16.

779. **Pterinoblattina gigas.** (Blattariæ.)

Locality: Solenhofen, Bavaria. Horizon: Oolite.

1885. Scudder. Proc. acad. nat. sc. Philad., 1885: 108.
1886. " Mem. Bost. soc. nat. hist., iii: 472.
1888. Oppenheim. Palaeontogr., xxxiv: 222.
1890. Scudder. Foss. ins. N. A., i: 364.
See also Ricania gigas.

780. **Pterinoblattina hospes.** (Blattariæ.)

Locality: Solenhofen, Bavaria. Horizon: Oolite.

1885. Scudder. Proc. acad. nat. sc. Philad., 1885: 108.
1886. " Mem. Bost. soc. nat. hist., iii: 472.
1888. Oppenheim. Palaeontogr., xxxiv: 221-222. *Pl.* 31, *fig.* 29.
1890. Scudder. Foss. ins. N. A., i: 364.
See also Ricania hospes.

781. **Pterinoblattina intermixta.** (Blattariæ.)

Locality: Alderton, Gloucestershire, England. Horizon: Upper Lias.

1885. Scudder. Proc. acad. nat. sc. Philad., 1885: 107-108.
1886. " Mem. Bost. soc. nat. hist., iii: 471-472. *Pl.* 48, *fig.* 9.
1886. " Miall, Cockroach, 218. *Fig.* 125.
1890. " Foss. ins. N. A., i: 363-364. *Pl.* 22, *fig.* 9.

782. **Pterinoblattina penna.** (Blattariæ.)

Locality: England. Horizon: Purbecks.

1885. Scudder. Proc. acad. nat. sc. Philad., 1885: 106.
1886. " Mem. Bost. soc. nat. hist., iii: 470. *Pl.* 48, *fig.* 14.
1890. " Foss. ins. N. A., i: 362. *Pl.* 22, *fig.* 14.

783. **Pterinoblattina pluma.** (Blattariæ.)

Locality: Dorset, England. Horizon: Purbecks.

1885. Scudder. Proc. acad. nat. sc. Philad., 1885: 105-106.
1885. " Zittel, Handb. palaeont., i, th. ii: 755. *Fig.* 935.
1886. " Zittel-Barrois, Traité de paléont., ii: 767. *Fig.* 930.
1886. " Mem. Bost. soc. nat. hist., iii: 469-470. *Pl.* 48, *figs.* 7, 8c.
1890. " Foss. ins. N. A., i: 361-362. *Pl.* 22, *figs.* 7, 8c.
See also Blatta pluma, Blattidium pluma.

784. **Pterinoblattina sipylus.** (Blattariæ.)

Locality: Durdlestone Bay, England. Horizon: Lower Purbecks.

1886. Scudder. Mem. Bost. soc. nat. hist., iii: 472-473.
1890. " Foss. ins. N. A., i: 364-365.
See also Sialium sipylus, Abia sipylus.

785. **Pycnophlebia speciosa.** (Locustariæ.)

Locality: Eichstadt, Bavaria. Horizon: Jura.

1886. Deichmüller. Ins. lith. schicht. dresd. mus., 20-24. *Pl.* 2, *figs.* 1, 2*a*, 3.
See also Locusta speciosa, etc.

786. **Pycnophlebia (Locusta) speciosa.** (Locustariæ.)

Locality: Solenhofen, Bavaria. Horizon: Jura.

1888. Oppenheim. Palaeontogr., xxxiv: 223-224. *Pl.* 30, *fig.* 4.
See also Locusta speciosa, etc.

787. **Pygolampis gigantea.** (Acridii.)

Locality: Solenhofen, Bavaria. Horizon: Jura.

1839. Münster. MSS.
1839. Germar. Verhandl. leop.-carol. akad. naturf., xix: 207-208. *Pl.* 22, *fig.* 8.
1852. Giebel. Deutsch. petref., 637.
1856. " Insect. d. vorwelt, 364.

1862.	Hagen.	Palaeontogr., x: 111.
1869.	Weyenbergh.	Arch. mus. Teyl., ii: 273. *Pl.* 35, *fig.* 21.
1869.	"	Ins. foss. calc. lithogr., 27. *Pl.* 2, *fig.* 21.
1869.	"	Tijdschr. v. ent., (2), iv: 233 [133].
1874.	"	Periód. zool., i: 99.
1874.	"	Énum. syst. faune ent. mésoz., 13.
1877.	Assmann.	Ber. versamml. deutsch. naturf., l: 192 (=Chresmoda obscura).
1885.	Scudder.	Zittel, Handb. palaeont., i, th. ii: 783. *Fig.* 996.
1886.	"	Zittel-Barrois, Traité de paléont., ii: 783. *Fig.* 1013.

See also Chresmoda obscura, etc.

788. **Ricania gigas.** (Blattariæ.)

Locality: Solenhofen, Bavaria. Horizon: Jura.

1869.	Weyenbergh.	Arch. mus. Teyl., ii: 270–271. *Pl.* 35, *fig.* 23.
1869.	"	Ins. foss. calc. lithogr., 24–25. *Pl.* 2, *fig.* 23.
1869.	"	Tijdschr. v. ent., (2), iv: 234 [134].
1874.	"	Periód. zool., i: 100.
1874.	"	Énum. syst. faune ent. mésoz., 14.
1885.	Scudder.	Zittel, Handb. palaeont., i, th. ii: 780.
1886.	"	Zittel-Barrois, Traité de paléont., ii: 780.

See also Pterinoblattina gigas.

789. **Ricania hospes.** (Blattariæ.)

Locality: Solenhofen, Bavaria. Horizon: Jura.

1839.	Germar.	Verhandl. leop.-carol. akad. naturf., xix: 220–221. *Pl.* 23, *fig.* 18.
1852.	Giebel.	Deutschl. petref., 636.
1856.	"	Insect. d. vorwelt, 376.
1862.	Hagen.	Palaeontogr., x: 111.
1869.	Weyenbergh.	Tijdschr. v. ent., (2), iv. 234 [134].
1874.	"	Periód. zool., i: 100.
1874.	"	Énum. syst. faune ent. mésoz., 14.
1877.	Assmann.	Ber. versamml. deutsch. naturf., l: 192 (Neuropt.).
1885.	Scudder.	Zittel, Handb. palaeont., i, ii: 780.
1886.	"	Zittel-Barrois, Traité de paléont., ii: 780.

See also Pterinoblattina hospes.

790. **Rithma ———.** (Blattariæ.)

Locality: England. Horizon: Purbecks.

1886.	Scudder.	Mem. Bost. soc. nat. hist., iii: 450. *Pl.* 46, *fig.* 8.
1890.	"	Foss. ins. N. A., i: 342. *Pl.* 20, *fig.* 8.

791. **Rithma antiqua.** (Blattariæ.)

Locality: Durdlestone Bay, England. Horizon: Lower Purbecks.

1854.	Westwood.	Quart. journ. geol. soc. Lond., x: 387, 395 (unnamed). *Pl.* 17, *fig.* 10.
1856.	Giebel.	Insect. d. vorwelt, 319.
1877.	Goldenberg.	Fauna saræp. foss., ii: 21.

See also Blattidium antiquum, Mesoblattina antiqua.

792. **Rithma daltoni.** (Blattariæ.)

Locality: England. Horizon: Purbecks.

1886.	Scudder.	Mem. Bost. soc. nat. hist., iii: 449. *Pl.* 46, *fig.* 16.
1890.	"	Foss. ins. N. A., i: 341. *Pl.* 20, *fig.* 16.

793. Rithma disjuncta. (Blattariæ.)

Locality: Wiltshire, England. Horizon: Purbecks.

1886. Scudder. Mem. Bost. soc. nat. hist., iii: 446. *Pl.* 46, *fig.* 14.
1890. " Foss. ins. N. A., i: 338. *Pl.* 20, *fig.* 14.

794. Rithma formosa. (Blattariæ.)

Locality: Schambelen, Switzerland. Horizon: Lias.

1885. Scudder. Proc. acad. nat. sc. Philad., 1885: 113, 114.
1885. " Zittel, Handb. palaeont., i, th. ii: 767. *Fig.* 962.
1886. " Zittel-Barrois, Traité de paléont., ii: 767. *Fig.* 978.
1886. " Mem. Bost. soc. nat. hist., iii: 447–448.
1890. " Foss. ins. N. A., i: 339–340.
See also Blattina formosa.

795. Rithma gossii. (Blattariæ.)

Locality: England. Horizon: Purbecks.

1886. Scudder. Mem. Bost. soc. nat. hist., iii: 445–446. *Pl.* 46, *fig.* 15.
1890. " Foss. ins. N. A., i: 337–338. *Pl.* 20, *fig.* 15.

796. Rithma liasina. (Blattariæ.)

Locality: Wainlode, Strensham, England. Horizon: Lower Lias.

1885. Scudder. Proc. acad. nat. sc. Philad., 1885: 113, 114.
1886. " Mem. Bost. soc. nat. hist., iii: 447. *Pl.* 46, *fig.* 7.
1890. " Foss. ins. N. A., i: 339. *Pl.* 20, *fig.* 7.
See also Blattina liasina, etc.

797. Rithma minima. (Blattariæ.)

Locality: Dorset, England. Horizon: Middle Purbecks.

1886. Scudder. Mem. Bost. soc. nat. hist., iii: 450–451. *Pl.* 48, *figs.* 2, 8*a*, 8*g*, 11.
1890. " Foss. ins. N. A., i: 342–343. *Pl.* 22, *figs.* 2, 8*a*, 8*g*, 11.

798. Rithma morrisi. (Blattariæ.)

Locality: Durdlestone Bay, England. Horizon: Lower Purbecks.

1854. Westwood. Quart. journ. geol. soc. Lond., x: 390, 396 (unnamed). *Pl.* 18, *fig.* 34.
1856. Giebel. Insect. d. vorwelt, 319.
1877. Goldenberg. Fauna saræp. foss., ii: 21.
1885. Scudder. Proc. acad. nat. sc. Philad., 1885: 113, 114.
1886. " Mem. Bost. soc. nat. hist., iii: 448.
1890. " Foss. ins. N. A., i: 340.
See also Blattidium morrisi.

799. Rithma murchisoni. (Blattariæ.)

Locality: Durdlestone Bay, England. Horizon: Lower Purbecks.

1854. Westwood. Quart. journ. geol. soc. Lond., x: 390, 396 (unnamed). *Pl.* 18, *fig.* 43.
1856. Giebel. Insect. d. vorwelt, 319.
1877. Goldenberg. Fauna saræp. foss., ii: 21.
See also Blattidium murchisoni, Mesoblattina murchisoni,

800. **Rithma purbeccensis.** (Blattariæ.)

Locality: Durdlestone Bay, England. **Horizon:** Lower Purbecks.

1854. Westwood. Quart. journ. geol. soc. Lond., x: 390, 396 (unnamed). *Pl.* 18, *fig.* 32.
1856. Giebel. Insect. d. vorwelt, 319.
1877. Goldenberg. Fauna saræp. foss., ii: 21.
1885. Scudder. Proc. acad. nat. sc. Philad., 1885: 113, 114.
1886. " Mem. Bost. soc. nat. hist., iii: 448–449.
1890. " Foss. ins. N. A., i: 340–341.

See also Blattidium purbeccensis.

801. **Rithma ramificata.** (Blattariæ.)

Locality: Durdlestone Bay, England. **Horizon:** Middle Purbecks.

1854. Westwood. Quart. journ. geol. soc. Lond., x: 394 (unnamed). *Pl.* 15, *fig.* 20.
1856. Giebel. Insect. d. vorwelt, 319.
1877. Goldenberg. Fauna saræp. foss., ii: 21.
1885. Scudder. Proc. acad. nat. sc. Philad., 1885: 113.

See also Blattidium ramificatum, Elisama ramificata.

802. **Rithma stricklandi.** (Blattariæ.)

Locality: Vale of Wardour, England. **Horizon:** Purbecks.

1886. Scudder. Mem. Bost. soc. nat. hist., iii: 445. *Pl.* 46, *figs.* 4, 5.
1890. " Foss. ins. N. A., i: 337. *Pl.* 20, *figs.* 4, 5.

See also Blatta stricklandi, Blattidium stricklandi.

803. **Rithma westwoodi.** (Blattariæ.)

Locality: Durdlestone Bay, England. **Horizon:** Lower Purbecks.

1854. Westwood. Quart. journ. geol. soc. Lond., x: 390, 396 (unnamed). *Pl.* 18, *fig.* 22.
1856. Giebel. Insect. d. vorwelt, 318–319.
1877. Goldenberg. Fauna saræp. foss., ii: 21.
1885. Scudder. Proc. acad. nat. sc. Philad., 1885: 113.
1886. " Mem. Bost. soc. nat. hist., iii: 449–450. *Pl.* 46, *figs.* 6?, 11.
1890. " Foss. ins. N. A., i: 341–342. *Pl.* 20, *figs.* 6?, 11.

See also Blattidium westwoodi.

804. **Scutinoblattina brongniarti.** (Blattariæ.)

Locality: Fairplay, Colo. **Horizon:** Trias.

1885. Scudder. Proc. acad. nat. sc. Philad., 1885: 110–111.
1886. " Mem. Bost. soc. nat. hist., iii: 478.
1890. " Mem. Bost. soc. nat. hist., vi: 469. *Pl.* 42, *fig.* 5.
1890. " Foss. ins. N. A., i: 370, 445. *Pl.* 34, *fig.* 5.

805. **Scutinoblattina intermedia.** (Blattariæ.)

Locality: Fairplay, Colo. **Horizon:** Trias.

1885. Scudder. Proc. acad. nat. sc. Philad., 1885: 111.
1886. " Mem. Bost. soc. nat. hist., iii: 478.
1890. " Mem. Bost. soc. nat. hist., iv: 469, 470. *Pl.* 42, *fig.* 4.
1890. " Foss. ins. N. A., i: 370, 445, 446. *Pl.* 34, *fig.* 4.

806. Scutinoblattina recta. (Blattariæ.)

Locality: Fairplay, Colo. Horizon: Trias.

1885. Scudder. Proc. acad. nat. sc. Philad., 1885: 111.
1886. " Mem. Bost. soc. nat. hist., iii: 478.
1890. " Mem Bost. soc. nat. hist., iv: 469, 470. *Pl.* 42, *figs.* 3, 16.
1890. " Foss. ins. N. A., i: 370, 445, 446 *Pl.* 34, *figs.* 3, 16.

807. Sialium sipylus. (Blattariæ.)

Locality: Durdlestone Bay, England. Horizon: Lower Purbecks.

1854. Westwood. Proc. geol. soc. Lond., x: 390, 396. *Pl.* 18, *fig.* 24.
1886. Deichmüller. Ins. lith. schichten dresd. mus., 17 (cf. Elcana).

See also Abia sipylus, Pterinoblattina sipylus.

808. Spiloblattina gardineri. (Palæoblattariæ.)

Locality: Fairplay, Colo. Horizon: Trias.

1885. Scudder. Proc. acad. nat. sc. Philad., 1885: 36.
1885. " Zittel, Handb. palaeont., i, th. ii: 754. *Fig.* 933.
1886. " Zittel-Barrois, Traité de paléont., ii: 754. *Fig.* 950.
1889. Lesley. Dict. foss. Penns., i: 352. *Fig.* on *p.* 351.
1890. Scudder. Mem. Bost. soc. nat. hist., iv: 461–462. *Pl.* 41, *figs.* 4, 6, 8, 10.
1890. " Foss. ins. N. A., i: 437–438. *Pl.* 33, *figs.* 4, 6, 8, 10.

809. Spiloblattina guttata. (Palæoblattariæ.)

Locality: Fairplay, Colo. Horizon: Trias.

1885. Scudder. Proc. acad. nat. sc. Philad., 1885: 36–37.
1890. " Mem. Bost. soc. nat. hist., iv: 461, 463. *Pl.* 41, *fig.* 2; *Pl.* 42, *fig.* 14.
1890. " Foss. ins. N. A., i: 437, 439. *Pl.* 33, *fig.* 2; *Pl.* 34, *fig.* 14.

810. Spiloblattina marginata. (Palæoblattariæ.)

Locality: Fairplay, Colo. Horizon: Trias.

1885. Scudder. Proc. acad. nat. sc. Philad., 1885: 37.
1890. " Mem. Bost. soc. nat. hist., iv: 461, 464. *Pl.* 41, *fig.* 3.
1890. " Foss. ins. N. A., i: 437, 440. *Pl.* 33, *fig.* 3.

811. Spiloblattina triassica. (Palæoblattariæ.)

Locality: Fairplay, Colo. Horizon: Trias.

1885. Scudder. Proc. acad. nat. sc. Philad., 1885: 36.
1890. " Mem. Bost. soc. nat. hist., iv: 461, 462–463. *Pl.* 41, *fig.* 1.
1890. " Foss. ins. N. A., i: 437, 438–439. *Pl.* 33, *fig.* 1.

NEUROPTERA.

812. ——— ———.

Localities: Hastings, Govers, Cliff End, England. Horizon: Wealden.

1854. Binfield. Quart. journ. geol. soc. Lond., x: 172, 173, 174.

813. ——— ———.

Locality: Vale of Wardour, England. Horizon: Purbecks.

1845. Brodie. Foss. ins. sec. rocks Engl., 32 (Westw., 116, Staphylinidæ? or Termes?). *Pl.* 2, *fig.* 2.

See also Philonthus kneri, Termes grandævus, etc.

814. ——— ———.

Locality: Vale of Wardour, England. **Horizon:** Purbecks.

1845. Brodie. Foss. ins. sec. rocks Engl., 32 (Westw., 116, Staphylinidæ?). *Pl.* 2, *fig.* 3.

See also Prognatha crassa, Termes grandævus, etc.

815. ——— ———.

Locality: Copt Heath near Knowle, England. **Horizon:** Lower Lias.

1875. Brodie. Lower Lias Eatington, etc., 10.

816. ——— ———.

Localities: Brown's Wood and Stooper's Wood, near Henley in Arden, England.
Horizon. Lias.

1875. Brodie. Lower Lias Eatington, etc., 10.

817. ——— ———. (abdomen).

Locality: Dobbertin, Mecklenburg. **Horizon:** Lower Jura.

1880. E. Geinitz. Zeitschr. deutsch. geol. gesellsch., 1880: 531. *Pl.* 22, *fig.* 23.

818. ——— ———.

Locality: Ilminster, England. **Horizon:** Upper Lias.

1879. Goss. Proc. geol. assoc., vi: 130.
1879. " Ins. fauna mesoz. per., ii: 17.

819. ——— ———.

Compared with Ephemera and Æschna.

Locality: Banks of the Býrka, Siberia. **Horizon:** Jura.

1848. Müller. Middend., Sib. reise, i, th. i: 261. *Pl.* 11, *fig.* 7.

See also Ephemeropsis ——— Eichw., E. orientalis, E. trisetalis.

820. ——— ———.

Locality: Durdlestone Bay, England. **Horizon:** Middle Purbecks.

1854. Westwood. Quart. journ. geol. soc. Lond., x: 384, 394. *Pl.* 15, *fig.* 24.

821. ——— ———.

Locality: Ridgway, England. **Horizon:** Lower Purbecks.

1854. Westwood. Quart. journ. geol. soc. Lond., x: 385.

822. ——— ———.

Locality: Solenhofen, Bavaria. **Horizon:** Jura.

1869. Weyenbergh. Arch. mus. Teyl., ii: 265–266. *Pl.* 35, *fig.* 17.
1869. " Ins. foss. calc. lithogr., 19–20. *Pl.* 2, *fig.* 17.
1874. " Periód. zool., i: 95.
1874. " Énum. syst. faune ent. mésoz., 9.

823. ——— ———. (Leptoceridæ.)

Locality: Vale of Wardour, England. **Horizon:** Purbecks.

1845. Brodie. Foss. ins. sec. rocks Engl., 33 (Westwood, 118). *Pl.* 2, *fig.* 6.

824. —— ——. (Odonata.)

Localities: Strensham, Brockeridge, Binton, Wilmcote, Grafton, Brown's Wood, Barrow on Soar, England. Horizon: Lower Lias.

1873. Brodie. Distr. corr. foss. ins., 15.

825. —— ——. (Odonata.)

Locality: Strensham, England. Horizon: Lower Lias.

1874. Brodie. Distr. corr. foss. ins., 19.

826. —— —— (male organ). (Odonata.)

Localities: Brown's Wood and Stooper's Wood, near Henley in Arden, England. Horizon: Lias.

1874. Brodie. Distr. corr. foss. ins., 19.
1875. " Lower Lias Eatington, etc., 10.

827. —— ——. (Odonata.)

Locality: Pappenheim, Bavaria. Horizon: Jura.

1833. Parkinson. Organ. rem., 2d ed., iii: 265–266 (unnamed). *Pl.* 17, *fig.* 2.
Referred to Æschna antiqua by Gieb., Deutschl. petref., 639.
See also Æschna antiqua, etc.

828. —— ——. (Odonata.)

Locality: Eyeford, England. Horizon: Stonesfield slate.

1854. Westwood. Quart. journ. geol. soc. Lond., x: 381, 395. *Pl.* 17, *fig.* 20.

829. —— —— (Middle portion of wing.) (Odonata.)

Locality: Durdlestone Bay, England. Horizon: Middle Purbecks.

1854. Westwood. Quart. journ. geol. soc. Lond., x: 383.

—— ——. (Odonata.) See II, HEMIPT., —— —— (Pentatomidæ) Westw.

830. —— **aspasia.** (Odonata-Calopterygina.)

Locality: Solenhofen, Bavaria. Horizon: Jura.

1862. Hagen. Palaeontogr., x: 105 (undescr.).
See also Anax buchi, etc.

831. —— **abscissa.** (Odonata-Libellulina.)

Locality: Bavaria. Horizon: Jura.

1868. Brauer. Verhandl. zool.-bot. gesellsch. Wien, xviii: 738.
See also (Libellula) abscissa.

832. —— **antiqua.** (Odonata-Libellulina.)

Locality: Bavaria. Horizon: Jura.

1868. Brauer. Verhandl. zool.-bot. gesellsch. Wien, xviii: 738.
See also Æschna antiqua, etc.

833. —— **brodiei.** (Odonata-Libellulina.)

Locality: England. Horizon: Upper Lias.

1868. Brauer. Verhandl. zool.-bot. gesellsch. Wien, xviii: 738.
See also Libellula brodiei, etc.

834. ——— **decapitata.** (Odonata-Libellulina.)

Locality: England. Horizon: Lias.

1868. Brauer. Verhandl. zool.-bot. gesellsch. Wien, xviii: 738.
See also Libellula decapitata.

835. ——— **densa.** (Odonata-Libellulina.)

Locality: Eichstadt, Bavaria. Horizon: Jura.

1868. Brauer. Verhandl. zool.-bot. gesellsch. Wien, xviii: 738.
See also Estemoa densa, (Libellula) densa, Estemoa bubas, etc.

836. ——— **nævia.** (Odonata-Libellulina.)

Locality: Bavaria. Horizon: Jura.

1868. Brauer. Verhandl. zool.-bot. gesellsch. Wien, xviii: 738.
See also (Libellula) nævia.

837. ——— **valga.** (Odonata-Libellulina.)

Locality: Bavaria. Horizon: Jura.

1868. Brauer. Verhandl. zool.-bot. gesellsch. Wien, xviii: 738.
See also (Libellula) valga.

838. ——— ——— (Panorpidæ?)

Locality: Dobbertin, Mecklenburg. Horizon: Lower Jura.

1880. E. Geinitz. Zeitschr. deutsch. geol. gesellsch., 1880: 526–527. *Pl.* 22, *fig.* 12.

839. ——— ———. (Sialina?)

Locality: Durdlestone Bay, England. Horizon: Lower Purbecks.

1854. Westwood. Quart. journ. geol. soc. Lond., x: 390, 396. *Pl.* 18, *fig.* 35.

840. ——— ———. (Sialina?)

Locality: Durdlestone Bay, England. Horizon: Lower Purbecks.

1854. Westwood. Quart. journ. geol. soc. Lond., x: 390, 396. *Pl.* 18, *fig.* 37.

841. ——— ———. (Trichoptera.)

Locality: Vale of Wardour, England. Horizon: Purbecks.

1845. Brodie. Foss. ins. sec. rocks Engl., 33 (Westwood, 118–119). *Pl.* 2, *fig.* 7.

842. ——— ———. (Trichoptera.)

Locality: Grafton, England. Horizon: Lower Lias.

1873. Brodie. Distr. corr. foss. ins., 15.

843. ——— ———. (Trichoptera.)

Localities: Brown's Wood and Stooper's Wood, near Henley in Arden, England.
Horizon: Lias.

1875. Brodie. Lower Lias Eatington, etc., 10.

844. ——— ———. (Larva.) (Trichoptera.)

Locality: Dobbertin, Mecklenburg. Horizon: Lower Jura.

1880. E. Geinitz. Zeitschr. deutsch. geol. gesellsch., 1880: 531. *Pl.* 22, *fig.* 24.

845. ——— ———. (Trichoptera.)

Locality: Durdlestone Bay, England. Horizon: Middle Purbecks.

1854.	Westwood.	Quart. journ. geol. soc. Lond., x: 383–384, 394. *Pl.* 15, *fig.* $14^{\odot}$.
1886.	Scudder.	Mem. Bost. soc. nat. hist., iii: 451. *Pl.* 48, *figs.* 8*b*, 10.
1890.	"	Foss. ins. N. A., i: 343. *Pl.* 22, *figs.* 8*b*, 10.

846. ——— ———. (Trichoptera.)

Locality: Durdlestone Bay, England. Horizon: Middle Purbecks.

1854.	Westwood.	Quart. journ. geol. soc. Lond., x: 383–384, 394. *Pl.* 15, *fig.* 14^{*}.
1886.	Scudder.	Mem. Bost. soc. nat. hist., iii: 451. *Pl.* 48, *figs.* 8*d*, 12.
1890.	"	Foss. ins. N. A., i: 343. *Pl.* 22, *figs.* 8*d*, 12.

847. ——— ———. (Trichoptera.)

Locality: Durdlestone Bay, England. Horizon: Lower Purbecks.

1854.	Westwood.	Quart. journ. geol. soc. Lond., x: 390, 396. *Pl.* 18, *fig.* 25.

848. ——— ———. (Trichoptera.)

Locality: Durdlestone Bay, England. Horizon: Lower Purbecks.

1854.	Westwood.	Quart. journ. geol. soc. Lond., x: 390, 396. *Pl.* 18, *fig.* 28.

849. Abia duplicata.

Locality: Durdlestone Bay, England. Horizon: Lower Purbecks.

1854.	Westwood.	Quart. journ. geol. soc. Lond., x: 396 (unnamed). *Pl.* 18, *fig.* 42.
1856.	Giebel.	Insect. d. vorwelt, 264.

Abia sipylus. See II, ORTHOPT., Idem.

850. Æschna, ———. (Odonata.)

Locality: Dumbleton, England. Horizon: Upper Lias.

1873.	Brodie.	Distr. corr. foss. ins., 15.

851. Æschna or Libellula ———. (Odonata.)

Locality: Solenhofen, Bavaria. Horizon: Jura.

1839.	Erichson.	v. Buch, Abhandl. akad. wiss. Berl., 1837; phys. abhandl., 135. *Pl.* 3.

See also Anax buchii, etc.

852. Æschna, ———. (Odonata.)

Locality: Bavaria. Horizon: Jura.

1826.	Koehler.	Zeitschr. f. min., 1826: 231–233. *Pl.* 7, *fig.* 3.

See also Uropetala koehleri, etc.

853. Æschna (vic.) ———. (Odonata.)

Locality: Durdlestone Bay, England. Horizon: Lower Purbecks.

1854.	Westwood.	Quart. journ. geol. soc. Lond., x: 390.

854. Æschna ———. (Odonata.)

Locality: Eyeford, England. Horizon: Stonesfield Slate.

1854.	Westwood.	Quart. journ. geol. soc. Lond., x: 395 (unnamed). *Pl.* 17, *fig.* 20.
1856.	Giebel.	Insect. d. vorwelt, 281.

855. Æschna antiqua. (Odonata.)

Locality: Solenhofen, Bavaria. Horizon: Jura.

1827.	Linden.	Nouv. mém. acad. sc. Brux., iv: 247–253. *Pl.* 1.
1827.	"	Notice empr. ins., 1–9. *Pl.*
1839.	Brullé.	Gisem. ins. foss., 12.
1850.	Hagen.	Rev. odon. (Mém. soc. roy. sc. Liége, vi): 362.
1852.	Giebel.	Deutschl. petref., 639.
1856.	"	Insect. d. vorwelt, 279.
1862.	Hagen.	Palaeontogr., x: 136–137.

See also ——— antiqua (Odonata, Libellulina), ——— ——— (Odonata) Parkinson, Æschna münsteri, Diastatomma münsteri, Cordulegaster münsteri, Petalura münsteri, Æschna wittei, Petalura wittei, Protolindenia wittei, Libella ——— Schmidel, Æschna schmideli, Agrion latreillei, Heterophlebia latreillei, Isophlebia helle, Heterophlebia helle.

856. Æschna bavarica. (Odonata.)

Locality: Bavaria. Horizon: Jura.

1856.	Giebel.	Insect. d. vorwelt, 280–281.

See also Cymatophlebia longialata, etc.

857. Æschna brodiei. (Odonata.)

Locality: Dumbleton, England. Horizon: Upper Lias.

1843.	Buckman.	Proc. geol. soc. Lond., iv: 212 (undescr.).
1844.	"	Ann. nat hist., xiv: 74 (undescr.).
1844.	"	Lond. Edinb. Dubl. phil. mag., xxiv: 377.
1845.	Murchison.	Geol. Cheltenham, 82. *Pl.* 8, *figs.* 1, 2.
1848.	Hagen.	Stett. entom. zeit., ix: 12.
1866.	Phillips.	Geol. mag., iii: 98. *Pl.* 6, *fig. d.*

See also Libellula brodiei, etc.

858. Æschna buchi. (Odonata.)

Locality: Solenhofen, Bavaria. Horizon: Jura.

1856.	Giebel.	Insect. d. vorwelt, 280.

See also Anax buchii, etc.

859. Æschna charpentieri. (Odonata.)

Locality: Solenhofen, Bavaria. Horizon: Jura.

1848.	Hagen.	Stett. entom. zeit., ix: 11–12.
1850.	"	Rev. odon. (Mém. soc. roy. sc. Liége, vi): 362.
1852.	Giebel.	Deutschl. petref., 639.
1856.	"	Insect. d. vorwelt, 278.

See also Anax buchii, etc.

860. Æschna flindersiensis. (Odonata.)

Locality: Flinder's River, Australia. Horizon: Cretaceous.

1884.	Woodward.	Geol. mag., (3), i: 337–339. *Pl.* 11, *fig.* 1.
1886.	Deichmüller.	Ins. lith. schichten dresd. mus., 34 (Estemoa?).

861. Æschna gigantea. (Odonata.)

Locality: Solenhofen, Bavaria. Horizon: Jura.

1839.	Münster.	MSS.
1839.	Germar.	Verhandl. leop.-carol. akad. naturf., xix: 216. *Pl.* 23, *figs.* 13, 14, 14*a*.

1856. Giebel. Insect. d. vorwelt, 279.
1862. Hagen. Palaeontogr., x: 111 (two species).
1863. Winkler. Cat. syst. coll. pal. mus. Teyl., 424.
1877. Assmann. Ber. vers. deutsch. naturf., 1: 191.

See also Anax giganteus, Petalura gigantea, Estemoa gigantea, Æschna intermedia, Anax intermedius, Petalura intermedia, Cordulegaster intermedius, Petalura latialata, Petalura eximia; also Anax buchii, Æschna buchi, Æschna or Libellula ——— Erichs., Libellulites ——— Charp., Æschna charpentieri, Anax charpentieri, ——— aspasia (Odonata, Calopterygina), Isophlebia aspasia, Aspasia gigantea.

862. **Æschna hageni.** (Odonata.)

Locality: Schambelen, Switzerland. Horizon: Lias.

1865. Heer. Urwelt der Schweiz, 86. *Pl.* 7, *fig.* 9.
1872. " Monde prim. Suisse, 105. *Pl.* 7, *fig.* 9.
1876. " Prim. world Switz., i: 85. *Pl.* 7, *fig.* 9.
1879. " Urwelt der Schweiz, 96. *Pl.* 7, *fig.* 9.

863. **Æschna intermedia.** (Odonata.)

Locality: Solenhofen, Bavaria. Horizon: Jura.

1839. Münster. MSS.
1839. Germar. Verhandl. leop.-carol. akad. naturf., xix: 216. *Pl.* 23, *fig.* 13.
1856. Giebel. Insect. d. vorwelt, 280.
1877. Assmann. Ber. vers. deutsch. naturf., 1: 192.

See also A. gigantea, etc.

864. **Æschna liassina.** (Odonata.)

Localities: Near Evesham, Binton, Bidford, Warwickshire, England. Horizon: Lower Lias, Insect Limestone.

1840. Strickland. Mag. nat. hist., (2), iv: 301–303. *Figs.* 11–13.
1842. Dale. Ann. mag. nat. hist., ix: 257 (nearer to Cordulegaster and still more to Petalura).
1845. Brodie. Foss. ins. sec. rocks Engl., 102 (Æshna), 126. *Pl.* 10, *fig.* 4.
1845. Murchison. Geol. Cheltenham, 82.
1848. Hagen. Stett. entom. zeit., ix: 12.

See also Diastatomma liassina, Petalura liassina, Heterophlebia liassina, Libellula liassica, Libellula hopei, Heterophlebia hopei, Petalura hopei.

865. **Æschna longialata.** (Odonata.)

Locality: Solenhofen, Bavaria. Horizon: Jura.

1842. Münster. MSS.
1842. Germar. Münst., Beitr. z. petref., v: 79–81. *Pl.* 9, *fig.* 1; *Pl.* 13, *figs.* 6*a*–*b*
1846. Geinitz. Grundr. versteinerungsk., 187 (longiolata). *Pl.* 8, *figs.* 5, 5*a*.
1852. Quenstedt. Handb. petref. (unnamed). *Pl.* 24, *figs.* 1–3.
1856. Giebel. Insect. d. vorwelt, 279.
1877. Assmann. Ber. vers. deutsch. naturf., 1: 92.

See also Cymatophlebia longialata, etc.

Æschna longiolata. See Æschna longialata.

866. **Æschna münsteri.** (Odonata.)

Locality: Solenhofen, Bavaria. Horizon: Jura.

1839. Germar. Verhandl. leop.-carol. akad. naturf., xix: 215. *Pl.* 23, *fig.* 12.
1862. Hagen. Palaeontogr., x: 111, 137–138.
1863. Winkler. Cat. syst. coll. pal. mus. Teyl., 423.
1877. Assmann. Ber. vers. deutsch. naturf., 1: 192.

See also Diastatomma münsteri, Cordulegaster münsteri, Petalura münsteri, Æschna antiqua, etc.

867. **Æschna multicellulosa.** (Odonata.)

Locality: Solenhofen, Bavaria. Horizon: Jura.

1857.	Giebel.	Zeitschr. ges. naturw., ix: 378–380. *Pl.* 5, *fig.* 2.

See also Cymatophlebia longialata, etc.

868. **Æschna parkinsoni.** (Odonata.)

Locality: Pappenheim, near Solenhofen, Bavaria. Horizon: Jura?

1833.	Parkinson.	Org. rem., iii: 265–266 (unnamed). *Pl.* 17, *fig.* 2*a–c*.
1850.	Selys.	Rev. odon. (Mém. soc. roy. sc. Liége, vi): 362, note.
1856.	Giebel.	Insect. d. vorwelt, 279.

869. **Æschna perampla.** (Odonata.)

Locality: Vale of Wardour, England. Horizon: Purbecks.

1845.	Brodie.	Foss. ins. sec. rocks Engl., 33. *Pl.* 5, *fig.* 7.
1850.	Hagen.	Rev. odon. (Mém. soc. roy. sc. Liége, vi): 362.
1856.	Giebel.	Insect. d. vorwelt, 281.

870. **Æschna schmideli.** (Odonata.)

Locality: Bavaria. Horizon: Jura.

1856.	Giebel.	Insect. d. vorwelt, 278.
1862.	Hagen.	Palaeontogr., x: 141–142 (schmiedeli).

See also Libella ——— Schmidel, Æschna antiqua, etc.

Æschna schmiedeli. See Æschna schmideli.

871. **Æschna wittei.** (Odonata.)

Locality: Solenhofen, Bavaria. Horizon: Jura.

1860.	Giebel.	Zeitschr. ges. naturw., xvi: 127–131. *Pl.* 1, *fig.* 1.

See also Petalura wittei, Protolindenia wittei, Æschna antiqua, etc.

872. **Æschnidium bubas.** (Odonata.)

Locality: Durdlestone Bay, England. Horizon: Lower Purbecks.

1854.	Westwood.	Quart. journ. gèol. soc. Lond., x: 387, 393–394. *Pl.* 15, *fig.* 5.

See also Estemoa bubas, Libellula antiqua, Estemoa densa, etc.

Æshna liassina. See Æschna liassina.

873. **Agrion** ———. (Odonata.)

Locality: Durdlestone Bay, England. Horizon: Lower Purbecks.

1854.	Westwood.	Quart. journ. geol. soc. Lond., x: 390.

874. **Agrion** ———. (Odonata.)

Locality: Solenhofen, Bavaria. Horizon: Jura.

1863.	Winkler.	Cat. syst. coll. pal. mus. Teyl., 424, No. 6358.
1874.	Weyenbergh.	Periód. zool., i: 106.
1874.	"	Énum. syst. faune ent. mésoz., 20.

875. **Agrion buckmani.** (Odonata.)

Locality: Dumbleton, England. Horizon: Upper Lias.

1845.	Brodie.	Foss. ins. sec. rocks Engl., 102, 126. *Pl.* 8, *fig.* 2.
1871.	Phillips.	Geology of Oxford, 123.

See also Heterophlebia dislocata, etc.

876. **Agrion ? eichstættense.** (Odonata.)

Localities: Eichstadt, Solenhofen, Bavaria. Horizon: Jura.

1862.	Hagen.	Palaeontogr., x: 106, 118–119. *Pl.* 14, *fig.* 5.
1863.	Winkler.	Cat. syst. coll. pal. mus. Teyl., 424.
1869.	Weyenbergh.	Tijdschr. v. ent., (2), iv: 235.
1874.	"	Períód. zool., i: 93.
1874.	"	Énum. syst. faune ent. mésoz., 7.
1886.	Deichmüller.	Ins. lith. schichten dresd. mus., 58.

877. **Agrion exhaustum.** (Odonata.)

Localities: Eichstadt, Solenhofen, Bavaria. Horizon: Jura.

1862.	Hagen.	Palaeontogr., x: 106 (undescr.).
1869.	Weyenbergh.	Tijdschr. v. ent., (2), iv: 235.
1874.	"	Períód. zool., i: 93.
1874.	"	Énum. syst. faune ent. mésoz., 7.

878. **Agrion hecticum.** (Odonata.)

Locality: Eichstadt, Bavaria. Horizon: Jura.

1862.	Hagen.	Palaeontogr., x: 106 (undescr.).
1869.	Weyenbergh.	Tijdschr. v. ent., (2), iv: 235.
1874.	"	Períód. zool., i: 92.
1874.	"	Énum. syst. faune ent. mésoz., 6.

879. **Agrion latreillei.** (Odonata.)

Locality: Solenhofen, Bavaria. Horizon: Jura.

1839.	Münst.	MSS.
1839.	Germar.	Verhand. leop.-carol. akad. naturf., xix: 218. *Pl.* 23, *fig.* 16.
1846.	Geinitz.	Grundr. versteinerungsk., 187.
1848.	Hagen.	Stett. entom. zeit., ix: 9 (=Cordulegaster münsteri ?).
1862.	"	Palaeontogr., x: 111, 138–139.
1877.	Assmann.	Ber. vers. deutsch. naturf., l: 192.
1886.	Deichmüller.	Ins. lith. schichten dresd. mus., 44–45. *Pl.* 4, *fig.* 13.

See also Heterophlebia latreillei, Isophlebia helle etc., Æschna münsteri etc., Æschna antiqua etc.

Agrion venustum. See Agrion vetustum.

880. **Agrion vetustum.** (Odonata.)

Locality: Solenhofen, Bavaria. Horizon: Jura.

1848.	Hagen.	Stett. entom. zeit., ix: 7.
1850.	"	Rev. odon. (Mém. soc. roy. sc. Liége, vi): 356.
1852.	Giebel.	Deutschl. petref., 638 (venustum).
1856.	"	Insect. d. vorwelt, 272.
1863.	Hagen.	Palaeontogr., x: 106, 118.
1869.	Weyenbergh.	Tijdschr. v. ent., (2), iv: 235.
1874.	"	Períód. zool., i: 93.
1874.	"	Énum. syst. faune ent. mésoz., 7.

See also Agrionides ——— Charpentier.

881. **Agrionides ———.** (Odonata.)

Locality: Solenhofen, Bavaria. Horizon: Jura.

1840.	Charpentier.	Libell. europ., 170–173. *Pl.* 48, *figs.* 2, 3.

See also Agrion vetustum.

882. **Agrionidium ætna.** (Odonata.)

Locality: Durdlestone Bay, England. Horizon: Lower Purbecks.

1854. Westwood. Quart. journ. geol. soc. Lond., x: 396. *Pl.* 18, *fig.* 39.

883. **Anax buchii.** (Odonata.)

Locality: Solenhofen, Bavaria. Horizon: Jura.

1848. Hagen. Stett. entom. zeit., ix: 11.
1850. " Rev. odon. (Mém. soc. roy. sc. Liége, vi): 361.
1852. Giebel. Deutschl. petref., 639.
1862. Hagen. Palaeontogr., x: 143–144.
1866. " Palaeontogr., xv: 92–96. *Pl.* 3, *fig.* 2.
1866. " Neur. lithogr. schief., i: 36–40. *Pl.* 3, *fig.* 2.

See also Æschna buchi, Æschna or Libellula ——— Erichs., Libellulites ——— Charp., Æschna charpentieri, Anax charpentieri, ——— aspasia (Odonata, Calopterygina), Isophlebia aspasia, Aspasia gigantea; also Anax giganteus, etc.

884. **Anax charpentieri.** (Odonata.)

Locality: Eichstadt, Bavaria. Horizon: Jura.

1862. Hagen. Palaeontogr., x: 106, 140–141. *Pl.* 14, *fig.* 1.
1866. " Palaeontogr., xv: 95–96 (=A. buchi ♂).
1866. " Neur. lithogr. schief., i: 39–40 (=A. buchi ♂).
1869. Weyenbergh. Tijdschr. v. ent., (2), iv: 235.

See also A. buchii, etc.

885. **Anax giganteus.** (Odonata.)

Locality: Bavaria. Horizon: Jura.

1848. Hagen. Stett. entom. zeit., ix: 10.
1850. " Rev. odon. (Mém. soc. roy. sc. Liége, vi): 361.
1852. Giebel. Deutschl. petref., 639.
1862. Hagen. Palaeontogr., x: 142.

See also Æschna gigantea, Petalura gigantea, Estemoa gigantea, Æschna intermedia, Anax intermedius, Petalura intermedia, Cordulegaster intermedius, Petalura latialata, Petalura eximia; also Anax buchii, etc.

886. **Anax intermedius.** (Odonata.)

Locality: Solenhofen, Bavaria. Horizon: Jura.

1848. Hagen. Stett. entom. zeit., ix: 10.
1850. " Rev. odon. (Mém. soc. roy. sc. Liége, vi): 361.
1862. " Palaeontogr., x: 142–143.

See also Æschna gigantea, etc.

887. **Anax longialatus.** (Odonata.)

Locality: Solenhofen, Bavaria. Horizon: Jura.

1848. Hagen. Stett. entom. zeit., ix: 11.
1850. " Rev. odon. (Mém. soc. roy. sc. Liége, vi): 361 (longiolatus).
1852. Giebel. Deutschl. petref., 639.

See also Cymatophlebia longialata, etc.

Anax longiolatus. See Anax longialatus.

Apiaria antiqua. See II, HYMENOPTERA, Idem.

888. **Apochrysa excelsa.** (Hemerobina.)

Locality: Eichstadt, Bavaria. Horizon: Jura.

1862. Hagen. Palaeontogr., x: 108 (undescr.).
1869. Weyenbergh. Tijdschr. v. ent., (2), iv: 236.

876. **Agrion ? eichstættense.** (Odonata.)

Localities: Eichstadt, Solenhofen, Bavaria. Horizon: Jura.

1862. Hagen. Palaeontogr., x: 106, 118–119. *Pl.* 14, *fig.* 5.
1863. Winkler. Cat. syst. coll. pal. mus. Teyl., 424.
1869. Weyenbergh. Tijdschr. v. ent., (2), iv: 235.
1874. " Periód. zool., i: 93.
1874. " Énum. syst. faune ent. mésoz., 7.
1886. Deichmüller. Ins. lith. schichten dresd. mus., 58.

877. **Agrion exhaustum.** (Odonata.)

Localities: Eichstadt, Solenhofen, Bavaria. Horizon: Jura.

1862. Hagen. Palaeontogr., x: 106 (undescr.).
1869. Weyenbergh. Tijdschr. v. ent., (2), iv: 235.
1874. " Periód. zool., i: 93.
1874. " Énum. syst. faune ent. mésoz., 7.

878. **Agrion hecticum.** (Odonata.)

Locality: Eichstadt, Bavaria. Horizon: Jura.

1862. Hagen. Palaeontogr., x: 106 (undescr.).
1869. Weyenbergh. Tijdschr. v. ent., (2), iv: 235.
1874. " Periód. zool., i: 92.
1874. " Énum. syst. faune ent. mésoz., 6.

879. **Agrion latreillei.** (Odonata.)

Locality: Solenhofen, Bavaria. Horizon: Jura.

1839. Münst. MSS.
1839. Germar. Verhand. leop.-carol. akad. naturf., xix: 218. *Pl.* 23, *fig.* 16.
1846. Geinitz. Grundr. versteinerungsk., 187.
1848. Hagen. Stett. entom. zeit., ix: 9 (=Cordulegaster münsteri ?).
1862. " Palaeontogr., x: 111, 138–139.
1877. Assmann. Ber. vers. deutsch. naturf., 1: 192.
1886. Deichmüller. Ins. lith. schichten dresd. mus., 44–45. *Pl.* 4, *fig.* 13.

See also Heterophlebia latreillei, Isophlebia helle etc., Æschna münsteri etc., Æschna antiqua etc.

Agrion venustum. See Agrion vetustum.

880. **Agrion vetustum.** (Odonata.)

Locality: Solenhofen, Bavaria. Horizon: Jura.

1848. Hagen. Stett. entom. zeit., ix: 7.
1850. " Rev. odon. (Mém. soc. roy. sc. Liége, vi): 356.
1852. Giebel. Deutschl. petref., 638 (venustum).
1856. " Insect. d. vorwelt, 272.
1863. Hagen. Palaeontogr., x: 106, 118.
1869. Weyenbergh. Tijdschr. v. ent., (2), iv: 235.
1874. " Periód. zool., i: 93.
1874. " Énum. syst. faune ent. mésoz., 7.

See also Agrionides ——— Charpentier.

881. **Agrionides ———.** (Odonata.)

Locality: Solenhofen, Bavaria. Horizon: Jura.

1840. Charpentier. Libell. europ., 170–173. *Pl.* 48, *figs.* 2, 3.

See also Agrion vetustum.

882. Agrionidium ætna. (Odonata.)

Locality: Durdlestone Bay, England. Horizon: Lower Purbecks.

1854. Westwood. Quart. journ. geol. soc. Lond., x: 396. *Pl.* 18, *fig.* 39.

883. Anax buchii. (Odonata.)

Locality: Solenhofen, Bavaria. Horizon: Jura.

1848. Hagen. Stett. entom. zeit., ix: 11.
1850. " Rev. odon. (Mém. soc. roy. sc. Liége, vi): 361.
1852. Giebel. Deutschl. petref., 639.
1862. Hagen. Palaeontogr., x: 143–144.
1866. " Palaeontogr., xv: 92–96. *Pl.* 3, *fig.* 2.
1866. " Neur. lithogr. schief., i: 36–40. *Pl.* 3, *fig.* 2.

See also **Æschna buchi, Æschna or Libellula** ——— Erichs., **Libellulites** ——— Charp., **Æschna charpentieri, Anax charpentieri,** ——— **aspasia** (Odonata, Calopterygina), **Isophlebia aspasia, Aspasia gigantea**; also **Anax giganteus**, etc.

884. Anax charpentieri. (Odonata.)

Locality: Eichstadt, Bavaria. Horizon: Jura.

1862. Hagen. Palaeontogr., x: 106, 140–141. *Pl.* 14, *fig.* 1.
1866. " Palaeontogr., xv: 95–96 (=A. buchi ♂).
1866. " Neur. lithogr. schief., i: 39–40 (=A. buchi ♂).
1869. Weyenbergh. Tijdschr. v. ent., (2), iv: 235.

See also **A. buchii**, etc.

885. Anax giganteus. (Odonata.)

Locality: Bavaria. Horizon: Jura.

1848. Hagen. Stett. entom. zeit., ix: 10.
1850. " Rev. odon. (Mém. soc. roy. sc. Liége, vi): 361.
1852. Giebel. Deutschl. petref., 639.
1862. Hagen. Palaeontogr., x: 142.

See also **Æschna gigantea, Petalura gigantea, Estemoa gigantea, Æschna intermedia, Anax intermedius, Petalura intermedia, Cordulegaster intermedius, Petalura latialata, Petalura eximia**; also **Anax buchii**, etc.

886. Anax intermedius. (Odonata.)

Locality: Solenhofen, Bavaria. Horizon: Jura.

1848. Hagen. Stett. entom. zeit., ix: 10.
1850. " Rev. odon. (Mém. soc. roy. sc. Liége, vi): 361.
1862. " Palaeontogr., x: 142–143.

See also **Æschna gigantea**, etc.

887. Anax longialatus. (Odonata.)

Locality: Solenhofen, Bavaria. Horizon: Jura.

1848. Hagen. Stett. entom. zeit., ix: 11.
1850. " Rev. odon. (Mém. soc. roy. sc. Liége, vi): 361 (longiolatus).
1852. Giebel. Deutschl. petref., 639.

See also **Cymatophlebia longialata**, etc.

Anax longiolatus. See **Anax longialatus.**

Apiaria antiqua. See II, HYMENOPTERA, Idem.

888. Apochrysa excelsa. (Hemerobina.)

Locality: Eichstadt, Bavaria. Horizon: Jura.

1862. Hagen. Palaeontogr., x: 108 (undescr.).
1869. Weyenbergh. Tijdschr. v. ent., (2), iv: 236.

1885. Scudder. Zittel, Handb. palaeont., i, th. ii: 777.
1885. “ Zittel-Barrois, Traité de paléont., ii: 777.
1888. Oppenheim. Palaeontogr., xxxiv: 227. *Pl.* 30. *fig.* 1.

889. **Aspasia gigantea.** (Odonata.)

Locality: Solenhofen, Bavaria. Horizon: Jura.

1869. Weyenbergh. Tijdschr. v. ent., (2), iv: 234 [134], as of Hagen, but erroneously.
See also Anax buchii, etc.

Bittacus dubius. See II, Orthopt., Idem.

890. **Blattidium ——.** (Odonata.)

Locality: Vale of Wardour, England. Horizon: Purbecks.

1877. Goldenberg. Fauna saræp. foss., ii: 21, No. 51 (refers by mistake to Blattina similis Gieb.).
See also Libellula antiqua.

891. **Calopteryx lithographica.** (Odonata.)

Locality: Solenhofen, Bavaria. Horizon: Jura.

1857. Giebel. Zeitschr. ges. naturw., ix: 380–382. *Pl.* 5, *fig.* 1.
1862. Hagen. Palaeontogr., x: 105.
See also Heterophlebia phryne, etc.

892. **Calotermes maculatus.** (Termitina.)

Locality: Schambelen, Switzerland. Horizon: Lias.

1865. Heer. Urwelt der Schweiz, 86. *Pl.* 7, *fig.* 7.
1872. “ Monde prim. Suisse, 104. *Pl.* 7, *fig.* 7.
1876. “ Prim. world Switz., i: 85. *Pl.* 7, *fig.* 7.
1879. “ Urwelt der Schweitz, 2e aufl., 96. *Pl.* 7, *fig.* 7.

893. **Calotermes obtectus.** (Termitina.)

Locality: Schambelen, Switzerland. Horizon: Lias.

1865. Heer. Urwelt der Schweiz, 86.
1872. “ Monde prim. Suisse, 105.
1876. “ Prim. world Switz., i: 85.
1879. “ Urwelt der Schweiz, 2e aufl., 96.

894. **Calotermes plagiatus.** (Termitina.)

Locality: Schambelen, Switzerland. Horizon: Lias.

1865. Heer. Urwelt der Schweiz, 86. *Pl.* 7, *fig.* 6.
1872. “ Monde prim. Suisse, 104. *Pl.* 7, *fig.* 6.
1876. “ Prim. world Switz., i: 85. *Pl.* 7, *fig.* 6.
1879. “ Urwelt der Schweiz, 2e aufl., 96. *Pl.* 7, *fig.* 6.

895. **Calotermes troglodytes.** (Termitina.)

Locality: Schambelen, Switzerland. Horizon: Lias.

1865. Heer. Urwelt der Schweitz, 86.
1872. “ Monde prim. Suisse, 105.
1876. “ Prim. world Switz., i: 85.
1879. “ Urwelt der Schweiz, 2e aufl., 96.

896. Chauliodes ——. (Sialina.)

Localities: Hasfield, Strensham, Bidford, England. **Horizon:** Lower Lias.

1845. Brodie. Foss. ins. sec. rocks Engl., 102, 126. *Pl.* 8, *figs.* 3, 5, 6, 14; *Pl.* 10, *figs.* 6, 9–12.

See also Orthophlebia —— Westwood, 1845, O. parallela, O. similis, O. intermedia, O. lata, Hagla gracilis, H. similis, H. deleta, H. (Chauliodes) similis, Orthophlebia (Phryganidium) intermedia.

897. Chauliodes ——. (Sialina.)

Localities: Brown's Wood, Binton, Copt Heath, Knowle, England.
Horizon: Lower Lias.

1873. Brodie. Distr. corr. foss. ins., 15

898. Chauliodes ——. (Sialina.)

Locality: England. **Horizon:** Lias.

1871. Philips. Geology of Oxford, 123.

Chauliodes similis. See Hagla (Chauliodes) similis.

899. Chauliodites helveticus. (Sialina.)

Locality: Mythen, Canton Schwyz, Switzerland. **Horizon:** Trias.

1877. Heer. Flora foss. helvet., 77. *Pl.* 29, *figs.* 32, 32*b*.

900. Chauliodites minor. (Sialina.)

Locality: Hatham, England. **Horizon:** Lias, Planorbis Zone.

1876. Blake. Tate and Blake, Yorkshire Lias, 426. *Pl.* 16, *fig.* 12 (quoted as 6).

901. Chauliodites picteti. (Sialina.)

Locality: Gödewitz, bei Salzmunde, Germany. **Horizon:** Trias, Bunter Sandstein.

1864. Heer. Viert. naturf. gesellsch. Zürich, ix: 279, note. *Pl.*, *fig.* 11.
1872. " Monde prim. Suisse, 99.

902. Chauliodites zinkeni. (Sialina.)

Locality: Gödewitz, bei Salzmunde, Germany. **Horizon:** Trias, Bunter Sandstein.

1864. Heer. Viert. naturf. gesellsch. Zürich, ix: 279, note. *Pl.*, *fig.* 10.
1872. " Monde prim. Suisse, 99.

903. Chimarrha pytho. (Trichoptera.)

Locality: Durdlestone Bay, England. **Horizon:** Lower Purbecks.

1856. Giebel. Insect. d. vorwelt, 269.
See also Phryganidium pytho.

904. Chrysopa excelsa. (Hemerobina.)

Locality: Eichstadt, Bavaria. **Horizon:** Jura.

1888. Oppenheim. Palaeontogr., xxxiv: 227 (as of Hagen). *Pl.* 30, *fig.* 2.
See also Hemerobius priscus.

905. Chrysopa protogæa. (Hemerobina.)

Locality: Eichstadt, Bavaria. **Horizon:** Jura.

1862. Hagen. Palaeontogr., x: 108 (undescr.).
1866. " Stett. entom. zeit., xxvii: 396.
1869. Weyenbergh. Tijdschr. v. ent., (2), iv: 236.

906. Chrysopa ? solenhofensis. (Hemerobina.)
Locality: Solenhofen, Bavaria. Horizon: Jura.

1869. Weyenbergh. Arch. mus. Teyl., ii: 264. *Pl.* 34, *figs.* 11–12.
1869. " Ins. foss. calc. lithogr., 18. *Pl.* 1, *figs.* 11–12.
1869. " Tijdschr. v. ent., (2), iv: 236.
1874. " Period. zool., 1: 96.
1874. " Énum. syst. faune ent. mésoz., 10.

Clathrotermes (Elcana) geinitzi. See II, ORTHOPT., Idem.

907. Clathrotermes signatus. (Termitina.)
Locality: Schambelen, Switzerland. Horizon: Lias.

1865. Heer. Urwelt der Schweiz, 85. *Pl.* 7, *fig.* 8.
1872. " Monde prim. Suisse, 104. *Pl.* 7, *fig.* 8.
1876. " Prim. world Switz., i: 85. *Pl.* 7, *fig.* 8.
1879. " Urwelt der Schweiz, 2ᵉ aufl., 95. *Pl.* 7, *fig.* 8.
1885. Scudder. Zittel, Handb. palaeont., i, th. ii: 772. *Fig.* 973.
1886. " Zittel-Barrois, Traité de paléont., ii: 772. *Fig.* 990.
1886. Deichmüller. Ins. lith. schichten dresd. mus., 17–18. *Pl.* 2, *fig.* 8,

908. Cordulegaster intermedius. (Odonata.)
Locality: Solenhofen, Bavaria. Horizon: Jura.

1886. Deichmüller. Ins. lith. schichten dresd. mus., 45–48. *Pl.* 4, *fig.* 7
See also Æschna gigantea, etc.

Cordulegaster liassinus. See Æschna liassina.

909. Cordulegaster muensteri. (Odonata.)
Locality: Bavaria. Horizon: Jura.

1848. Hagen. Stett. ent. zeit., ix: 8–9.
1850. " Rev. odon. (Mém. soc. roy. sc. Liége, vi): 360.
See also Æschna münsteri, etc., Æschna antiqua, etc.

910. Corydalis ——.
Locality: Vale of Wardour, England. Horizon: Purbecks.

1845. Brodie. Foss. ins. sec. rocks Engl., 33, 119. *Pl.* 5, *figs.* 2, 3, 13, 14, 16.
1856. Hagen. Berendt, Bernst. befindl. organ. reste vorw., ii, th. i: 81 (Brod., v: 13.)

See also Orthophlebia minuta, Zalmona brodiei; also II, ORTHOPT., Blattidium similis, B. kollari, Blattina similis.

911. Corydalis vetusta. (Sialina.)
Locality: Eichstadt, Bavaria. Horizon: Jura.

1862. Hagen. Palaeontogr., x: 108 (undescr.).
1869. Weyenbergh. Tijdschr. v. ent., (2), iv: 236.
1888. Oppenheim. Palaeontogr., xxxiv: 227–228. *Pl.* 30, *fig.* 3; *Pl.* 31, *fig.* 31.

912. Corydalites fecundus. (Sialina.)
Compared with Corydalis cornutus, U. S.
Locality: Crow Creek, near Greeley, Colo. Horizon: Laramie Group.

1878. Scudder. Bull. U. S. geol. surv. terr., iv: 537–540 (fecundum).
1879. White. Ann. rep. U. S. geol. surv. terr., xi: 173–174.
1885. Scudder. Zittel, Handb. palaeont., i, th. ii: 776. *Fig.* 981*ab*.
1886. " Zittel-Barrois, Traité de paléont., ii: 776. *Fig.* 998*ab*.
1890. " Tert. ins. N. A., 149–153. *Pl.* 4, *figs.* 5–7, 13–16, 18–21, 23.

913. Cyllonium boisduvalianum.

Locality: Durdlestone Bay, England. Horizon: Lower Purbecks.

1854. Westwood. Quart. journ. geol. soc. Lond., x: 387, 395. *Pl.* 17, *fig.* 17.
1875. Scudder. Mem. Amer. assoc. adv. sc., i: 88–89. *Fig.* 2.
1877. Kirby. Synon. catal. diurn. lepid., suppl., 699.

914. Cyllonium hewitsonianum.

Locality: Durdlestone Bay, England. Horizon: Lower Purbecks.

1854. Westwood. Quart. journ. geol. soc. Lond., x: 390, 396. *Pl.* 18, *fig.* 27.
1875. Scudder. Mem. Amer. assoc. adv. sc., i: 88–89. *Fig.* 3.
1877. Kirby. Synon. catal. diurn. lepid., suppl., 699.

915. Cymatophlebia longialata. (Odonata.)

Locality: Bavaria. Horizon: Jura.

1886. Deichmüller. Ins. lith. schichten dresd. mus., 49–52 (longiolata). *Pl.* 3, *figs.* 5–8.

See also Libellula longialata, Æschna longialata, Anax longialatus, Petalia longialata, Gynacantha longialata, Æschna bavarica, A. multicellulosa.

Diastatomma liasina. See Diastatomma liassina.

916. Diastatomma liassina. (Odonata.)

Locality: England. Horizon: Lower Lias.

1856. Giebel. Insect. d. vorwelt, 276 (liasina).

See also Æschna liassina, etc.

917. Diastatomma münsteri. (Odonata.)

Locality: Bavaria. Horizon: Jura.

1856. Giebel. Insect. d. vorwelt, 276.

See also Æschna münsteri, etc., Æschna antiqua, etc.

918. Dictyoneura cellulosa. (Ephemeridæ.)

Locality: Bavaria. Horizon: Jura.

1868. Brauer. Verhandl. k.-k. zool.-bot. gesellsch. Wien, xviii: 389, note.
1868. " Verz. bek. neuropt., 31, note.
1871. Eaton. Trans. ent. soc. Lond., 1871: 40.

See also Ephemera cellulosa.

919. Dictyoneura procera. (Ephemeridæ.)

Locality: Bavaria. Horizon: Jura.

1868. Brauer. Verhandl. k.-k. zool.-bot. gesellsch. Wien, xviii: 389, note.
1868. " Verz. bek. neuropt., 31, note.
1871. Eaton. Trans. ent. soc. Lond., 1871: 40.

See also Ephemera procera.

920. Ela brephos.

Locality: Durdlestone Bay, England. Horizon: Lower Purbecks.

1856. Giebel. Insect. d. vorwelt, 257.

See also Raphidium brephos.

921. Elcana beyrichi.

Locality: Durdlestone Bay, England. Horizon: Lower Purbecks.

1856. Giebel. Insect. d. vorwelt, 259.
1884. E. Geinitz. Zeitschr. deutsch. geol. gesellsch., 1884: 579.
1886. Deichmüller. Ins. lith. schichten dresd. mus., 17.

See also Panorpidium tessellatum var.

Elcana (Clathrotermes) geinitzi. See II, ORTHOPT., Idem.

Elcana (Clathrotermes) intercalata. See II, ORTHOPT., Idem.

Elcana liasina. See Rapha liasina.

Elcana tessellata. See II, ORTHOPTERA, Idem.

922. Ephemera ——. (Ephemeridæ.)

Locality: Strensham, England. Horizon: Lower Lias, Insect Limestone.

1845. Brodie. Foss. ins. sec. rocks Engl., 102, 127. *Pl.* 10, *fig.* 14.
See also Rapha liasina.

923. Ephemera ——. (Ephemeridæ.)

Localities: Brown's Wood, Binton, Westbury, England. Horizon: Lower Lias.

1873. Brodie. Distr. corr. foss. ins., 15.

924. Ephemera (vic.) ——. (Ephemeridæ.)

Locality: Solenhofen, Bavaria. Horizon: Jura.

1871. Eaton. Trans. ent. soc. Lond., 1871: 158. *Pl.* 1, *fig.* 10.

925. Ephemera ——. (Ephemeridæ.)

Locality: England. Horizon: Lias.

1871. Phillips. Geology of Oxford, 123.

926. Ephemera cellulosa. (Ephemeridæ.)

Compared with E. vulgata.

Locality: Eichstadt, Bavaria. Horizon: Jura.

1862. Hagen. Palaeontogr., x: 107, 115–116. *Pl.* 15, *fig.* 3.
1869. Weyenbergh. Tijdschr. v. ent., (2), iv: 236.
See also Dictyoneura cellulosa.

927. Ephemera deposita. (Ephemeridæ.)

Locality: Solenhofen, Bavaria. Horizon: Jura.

1874. Weyenbergh. Perióid. zool., i: 86, 96. *Pl.* 3, *fig.* 14.
1874. " Énum. syst. faune ent. mésoz., 10.

928. Ephemera meyeri. (Ephemeridæ.)

Locality: Solenhofen, Bavaria. Horizon: Jura.

1874. Weyenbergh. Perióid. zool., i: 86, 96. *Pl.* 3, *fig.* 13.
1874. " Énum. syst. faune ent. mésoz., 10

929. Ephemera mortua. (Ephemeridæ.)

Localities: Eichstadt, Solenhofen, Bavaria. Horizon: Jura.

1862. Hagen. Palaeontogr., x: 107, 117. *Pl.* 15, *fig.* 5.
1869. Weyenbergh. Tijdschr. v. ent., (2), iv: 236.
1874. " Perióid. zool., i: 96.
1874. " Énum. syst. faune ent. mésoz., 10.
1886. Deichmüller. Ins. lith. schichten dresd. mus., 29. *Pl.* 2, *fig.* 13.
1888. Oppenheim. Palaeontogr., xxxiv: 225. *Pl.* 30, *fig.* 18.

930. Ephemera? multinervosa. (Ephemeridæ.)

Locality: Bavaria. Horizon: Jura.

1888. Oppenheim. Palaeontogr., xxxiv: 225.

931. Ephemera prisca. (Ephemeridæ.)

Locality: Solenhofen, Bavaria. Horizon: Jura.

1862. Hagen. Palaeontogr., x: 108, 117–118.
1869. Weyenbergh. Tijdschr. v. ent., (2), iv: 236.
See also Sciara prisca.

932. Ephemera procera. (Ephemeridæ.)

Locality: Eichstadt, Bavaria. Horizon: Jura.

1862. Hagen. Palaeontogr., x: 107, 116–117. *Pl.* 15, *fig.* 2.
1869. Weyenbergh. Tijdschr. v. ent., (2), iv: 236.
1888. Oppenheim. Palaeontogr., xxxiv: 225. *Pl.* 30, *fig.* 12.
See also Dictyoneura procera.

933. Ephemera speciosa. (Ephemeridæ.)

Locality: Eichstadt, Bavaria. Horizon: Jura.

1888. Oppenheim. Palaeontogr., xxxiv: 225. *Pl.* 30, *fig.* 13.

934. Ephemeropsis ——. (Ephemeridæ.)

Locality: Eastern Siberia. Horizon: Jura.

1865. Eichwald. Amtl. ber. vers. deutsch. naturf., xxxix: 170.
See also —— —— Müll., Ephemeropsis orientalis, E. trisetalis.

935. Ephemeropsis orientalis. (Ephemeridæ.)

Locality: Near Konduyewskaya on Tourga, Eastern Siberia. Horizon: Purbecks.

1868. Eichwald. Lethæa rossica, ii, pt. ii: 1192–1195. *Pl.* 37, *fig.* 8.
1889. Brauer-Redtenb.-Ganglb. Mém. acad. sc. St.-Pétersb., (7), xxxvi, No. 15: 5–6. *Pl.* [1], *figs.* 4*a–d*.
See also Ephemeropsis ——, E. trisetalis, —— —— Müll.

936. Ephemeropsis trisetalis. (Ephemeridæ.)

Locality: River Towega, distr. Nertschinsk, Siberia. Horizon: Jura.

1864. Eichwald. Bull. soc. géol. France, (2), xxi: 21–22.
1864. " Quart. journ. geol. soc. Lond., xx: 21.
See also E. orientalis, etc.

937. Estemoa bubas. (Odonata.)

Locality: England. Horizon: Lower Purbecks.

1856. Giebel. Insect. d. vorwelt, 287.
1886. Deichmüller. Ins. lith. schichten dresd. mus., 34 (= E. densa?).
See also Æschnidium bubas, Libellula antiqua, Blattidium —— Goldenb., Estemoa densa, etc.

938. Estemoa densa. (Odonata.)

Locality: Eichstadt, Bavaria. Horizon: Jura.

1886. Deichmüller. Ins. lith. schichten dresd. mus., 34–35. *Pl.* 3, *fig.* 4.
See also (Libellula) densa, —— densa (Odonata, Libellulina), Estemoa bubas, Æschnidium bubas, Libellula antiqua, Blattidium —— Goldenb.

Estemoa flindersiensis. See Æschna flindersiensis.

939. Estemoa gigantea. (Odonata.)

Locality: Eichstadt, Bavaria. Horizon: Jura.

1886. Deichmüller. Ins. lith. schichten dresd. mus., 35–37. *Pl.* 3, *figs.* 1–3.
See also Aeschna gigantea, etc.

940. Euphæa areolata. (Odonata.)

Locality: Eichstadt, Bavaria. Horizon: Jura.

1862. Hagen. Palaeontogr., x: 106 (undescr.).
1869. Weyenbergh. Tijdschr. v. ent., (2), iv: 235.

941. Euphæa filosa. (Odonata.)

Locality: Eichstadt, Bavaria. Horizon: Jura.

1862. Hagen. Palaeontogr., x: 106 (undescr.).
1869. Weyenbergh. Tijdschr. v. ent., (2), iv: 235.

942. Euphæa longiventris. (Odonata.)

Locality: Solenhofen, Bavaria. Horizon: Jura.

1862. Hagen. Palaeontogr., x: 106, 121–124. *Pl.* 13, *figs.* 7, 8.
1863. Winkler. Catal. syst. pal. mus. Teyl., 424.
1869. Weyenbergh. Tijdschr. v. ent., (2), iv: 235.
1874. " Periód. zool., i: 92.
1874. " Énum. syst. faune ent. mésoz., 6.
See also Tarsophlebia eximia, Heterophlebia eximia.

943. Euphæa ? multinervis. (Odonata.)

Localities: Eichstadt, Solenhofen, Bavaria. Horizon: Jura.

1862. Hagen. Palaeontogr., x: 106, 119–121. *Pl.* 14, *figs.* 2–4.
1874. Weyenbergh. Periód. zool., i: 92.
1874. " Énum. syst. faune ent. mésoz., 6.

Eutermes grandævus. See Termes (Eutermes) grandævus.

944. Flata haidingeri. (Termitina.)

Locality: Vale of Wardour, England. Horizon: Purbecks.

1845. Brodie. Foss. ins. sec. rocks Engl., 33, 118 (unnamed). *Pl.* 2, *fig.* 6.
1856. Giebel. Insect. d. vorwelt, 375.
1860. Hagen. Linn. entom., xii: 297 (= Termes grandævus).
See also Termes grandævus, etc.

945. Gomphoides brodiei. (Odonata.)

Locality: Dumbleton, England. Horizon: Upper Lias.

1850. Selys. Rev. odon. (Mém. soc. roy. sc. Liége, vi): 360, note.
See also Libellula brodiei, etc.

946. Gomphus brodiei. (Odonata.)

Locality: Dumbleton, England. Horizon: Upper Lias.

1850. Hagen. Rev. odon. (Mém. soc. roy. sc. Liége, vi): 360.
See also Libellula brodiei, etc.

Gomphus koechleri. See Gomphus koehleri.

947. **Gomphus koehleri.** (Odonata.)

Locality: Bavaria. Horizon: Jura.

1826. Koehler. Zeitschr. f. min., 1826, ii: 231 (unnamed). *Pl.* 7.
1848. Hagen. Stett. ent. zeit., ix: 8.
1850. " Rev. odon. (Mém. soc. roy. sc. Liége, vi): 360.
1852. Giebel. Deutschl. petref., 639 (koechleri).
1862. Hagen. Palaeontogr., x: 139.
See also Uropetala koehleri, etc.

948. **Gomphus petrificatus.** (Odonata.)

Locality: Vale of Wardour, England. Horizon: Purbecks.

1850. Hagen. Rev. odon. (Mém. soc. roy. sc. Liége, vi): 359.
See also Lindenia ——— Brodie, etc.

949. **Gynacantha longialata.** (Odonata.)

Locality: Bavaria. Horizon: Jura.

1848. Hagen. Stett. entom. zeit., ix: 9–10.
1850. " Rev. odon. (Mém. roy. soc. sc. Liége, vi): 361 (longiolata).
1852. Giebel. Deutschl. petref., 639.
See also Cymatophlebia longialata, etc.

Gynacantha longiolata. See Gynacantha longialata.

950. **Hagla ———.** (Sialina.)

Locality: England. Horizon; Lower Lias.

1845. Brodie. Foss. ins. sec. rocks Engl., (unnamed). *Pl.* 10, *fig.* 5.
1856. Giebel. Insect. d. vorwelt, 265–266.

951. **Hagla deleta.** (Sialina.)

Locality: England. Horizon: Lower Lias.

1845. Brodie. Foss. ins. sec. rocks Engl. (Chauliodes sp.). *Pl.* 8, *fig.* 3.
1856. Giebel. Insect. d. vorwelt, 265.
See also Chauliodes ——— Brodie, 1845, etc.

952. **Hagla gracilis.** (Sialina.)

Locality: England. Horizon: Lower Lias.

1845. Brodie. Foss. ins. sec. rocks Engl. (Chauliodes sp.). *Pl.* 8, *fig.* 14.
1856. Giebel. Insect. d. vorwelt, 264–265.
See also Chauliodes ——— Brodie, 1845, etc.

953. **Hagla ignota.** (Sialina.)

Locality: Durdlestone Bay, England. Horizon: Middle Purbecks.

1856. Giebel. Insect. d. vorwelt, 265.
See also Termitidium ignotum.

954. **Hagla similis.** (Sialina.)

Locality: England. Horizon: Lower Lias.

1845. Brodie. Foss. ins. sec. rocks Engl. (Chauliodes sp.). *Pl.* 8, *fig.* 6.
1856. Giebel. Insect. d. vorwelt, 265.
See also Chauliodes ——— Brodie, 1845, etc.

955. cf. Hagla (Chauliodes) similis. (Sialina.)

Locality: Dobbertin, Mecklenburg. Horizon: Lias.

1884. E. Geinitz. Zeitschr. deutsch. geol. gesellsch., 1884: 576–577. *Pl.* 13, *fig.* 12.
See also Chauliodes ——— Brodie, 1845, etc.

956. Hemerobioides giganteus. (Hemerobina.)

Locality: Stonesfield, England. Horizon: Stonesfield Slate.

1838. Buckland. Proc. geol. soc. Lond., ii: 688.
1838. " Lond. Edinb. Dubl. phil. mag., (3), xiii: 388.
1844. Mantell. Medals of creation, ii: 577.
1845. Brodie. Foss. ins. sec. rocks Engl., 45, 123. *Pl.* 6, *fig.* 22.
1854. Mantell. Medals of creation, 2d ed., ii: 553.
1871. Phillips. Geology of Oxford, 173. *Digr.* 35.
See also Hemerobius giganteus.

957. Hemerobius ———. (Hemerobina.)

Locality: Aust, England. Horizon: Rhætic.

1873. Brodie. Distr. corr. foss. ins., 17.

958. Hemerobius ———. (Hemerobina.)

Locality: England. Horizon: Lias.

1874. Brodie. Distr. corr. foss. ins., 19.

959. Hemerobius fossilis. (Hemerobina.)

Locality: Solenhofen, Bavaria. Horizon: Jura.

1869. Weyenbergh. Arch. mus. Teyl., ii: 264. *Pl.* 34, *fig.* 15.
1869. " Ins. foss. calc. lithogr., 18. *Pl.* 1, *fig.* 15.
1869. " Tijdschr. v. ent., (2), iv: 236.
1874. " Periód. zool., i; 97.
1874. " Énum. syst. faune ent. mésoz., 11.

960. Hemerobius giganteus. (Hemerobina.)

Locality: Stonesfield, England. Horizon: Stonesfield Slate.

1854. Morris. Catal. Brit. foss., 2d ed., 117.
1856. Giebel. Insect. d. vorwelt, 262.
1866. Hagen. Stett. ent. zeit., xxvii: 412 (an hujus generis?).
See also Hemerobioides giganteus.

961. Hemerobius higginsii. (Hemerobina.)

Locality: England. Horizon: Lower Lias, Insect Limestone.

1845. Brodie. Foss. ins. sec. rocks Engl., 102. *Pl.* 9, *fig.* 15.
1856. Giebel. Insect. d. vorwelt, 262.

962. Hemerobius priscus. (Hemerobina.)

Locality: Solenhofen, Bavaria. Horizon: Jura.

1869. Weyenbergh. Arch. mus. Teyl., ii: 264. *Pl.* 34, *figs.* 13, 14.
1869. " Ins. foss. calc. lithogr., 18. *Pl.* 1, *figs.* 13, 14.
1869. " Tijdschr. v. ent., (2), iv: 236.
1874. " Periód. zool., i: 97.
1874. " Énum. syst. faune ent. mésoz., 11.
1886. Deichmüller. Ins. lith. schichten dresd. mus., 58.
See also Chrysopa excelsa.

963. **Heterophlebia** ———. (Odonata.)

Locality: England. Horizon: Lias.

1848.	Westwood.	Brodie, Quart. journ. geol. soc. Lond., v: 35.
1848.	"	Brodie, Foss. ins. sec. rocks Engl., 126, 127. *Pl.* 8, *fig.* 4; *Pl.* 10, *fig.* 8.

964. **Heterophlebia æqualis.** (Odonata.)

Localities: Eichstadt, Solenhofen, Bavaria. Horizon: Jura.

1862.	Hagen.	Palaeontogr., x: 105, 124–127. *Pl.* 13, *figs.* 4–6.
1869.	Weyenbergh.	Tijdschr. v. ent., (2), iv: 234 [134].

See also Stenophlebia æqualis.

965. **Heterophlebia amphitrite.** (Odonata.)

Locality: Eichstadt, Bavaria. Horizon: Jura.

1862.	Hagen.	Palaeontogr., x: 105 (undescr.).

See also Stenophlebia amphitrite.

Heterophlebia brodiei. See Libellula (Heterophlebia) brodiei.

966. **Heterophlebia buckmanni.** (Odonata.)

Locality: Dumbleton, England. Horizon: Upper Lias.

1856.	Giebel.	Insect. d. vorwelt, 288.

See also Heterophlebia dislocata, etc.

967. **Heterophlebia casta.** (Odonata.)

Locality: Eichstadt, Bavaria. Horizon: Jura.

1862.	Hagen.	Palaeontogr., x: 106 (undescr., =Lib. brevialata Münst.?).
1869.	Weyenbergh.	Tijdschr. v. ent., (2), iv: 235.

See also Libellula brevialata.

968. **Heterophlebia dislocata.** (Odonata.)

Localities: Dumbleton, Cheltenham, England. Horizon: Upper Lias.

1848.	Brodie.	Quart. journ. geol. soc. Lond., v: 32–35. *Pl.* 2.
1848.	Westwood.	Brodie, Foss. ins. sec. rocks Engl. *Pl.* 8, *fig.* 2.
1848.	"	Quart. journ. geol. soc. Lond., v: 32–35.
1849.	Hagen.	Stett. ent. zeit., x: 226–231 (belongs to Gomphidæ). *Pl.* 1, *figs.* 2, 3.
1850.	"	Rev. odon. (Mém. soc. roy. sc. Liége, vi): 358–359.
1854.	Pictet.	Traité pal., 2e ed., ii: 374. *Pl.* 40, *fig.* 7.
1856.	Giebel.	Insect. d. vorwelt, 287–288.
1866.	Hagen.	Palaeontogr., xv: 62–65. *Pl.* 2, *figs.* 7–9.
1866.	"	Neur. lithogr. schiefer, i: 6–9. *Pl.* 2, *figs.* 7–9.
1869.	Weyenbergh.	Tijdschr. v. ent., (2), iv: 234 [134].

See also Libellula (Heterophlebia) dislocata, Libellula dislocata, Agrion buckmani, Heterophlebia buckmani.

969. **Heterophlebia eximia.** (Odonata.)

Locality: Eichstadt, Bavaria. Horizon: Jura.

1862.	Hagen.	Palaeontogr., x: 106 (undescr.).

See also Tarsophlebia eximia, Euphæa longiventris.

970. Heterophlebia helle. (Odonata.)

Locality: Eichstadt, Bavaria. Horizon: Jura.

1862. Hagen. Palaeontogr., x: 105 (undescr.).
1869. Weyenbergh. Tijdschr. v. ent., (2), iv: 234 [134] (undescr.).
See also Isophlebia helle, Agrion latreillei, etc., Æschna münsteri, etc., **Æschna antiqua**, etc.

971. Heterophlebia hopei. (Odonata.)

Locality: England. Horizon: Lias.

1850. Selys. Rev. odon. (Mem. soc. roy. sc. Liége, vi): 359, note.
See also Libellula hopei, Æschna liassina, etc.

972. Heterophlebia latreillei. (Odonata.)

Locality: Solenhofen, Bavaria. Horizon: Jura.

1862. Hagen. Palaeontogr., x: 139.
See also Agrion latreillei, Isophlebia helle, etc., Æschna münsteri, etc., **Æschna antiqua**, etc.

973. Heterophlebia liassina. (Odonata.)

Locality: England. Horizon: Lower Lias.

1850. Selys. Rev. odon. (Mém. soc. roy. sc. Liége, vi): 359, note.
See also **Æschna** liassina, etc.

974. Heterophlebia phryne. (Odonata.)

Locality: Eichstadt, Bavaria. Horizon: Jura.

1862. Hagen. Palaeontogr., x: 105 (undescr.).
See also Calopteryx lithographica, Stenophlebia phryne.

975. Heterophlebia westwoodi. (Odonata.)

Locality: Cheltenham, England. Horizon: Lower Lias.

1845. Brodie. Foss. ins. sec. rocks Engl. (unnamed). *Pl.* 10, *fig.* 8.
1850. Hagen. Rev. odon. (Mém. soc. roy. sc. Liége, vi): 359.
1856. Giebel. Insect. d. vorwelt, 288.
See also Tarsophlebia westwoodi.

976. Hexagenites weyenberghii. (Ephemeridæ.)

Locality: Solenhofen, Bavaria. Horizon: Jura.

1871. Eaton. Trans. ent. soc. Lond., 1871: 138 (unnamed). *Pl.* 1, *fig.* 10.
1880. Scudder. Dev. ins. N. Brunsw., 6–7.
1890. " Foss. ins. N. A., i: 158–159.

Hydropsyche seebachi. See Phryganidium (Hydropsyche) seebachi.

977. Isophlebia aspasia. (Odonata.)

Localities: Solenhofen, Eichstadt, Bavaria. Horizon: Jura.

1866. Hagen. Palaeontogr., xv: 70–75. *Pl.* 2, *fig.* 12; *pl.* 4, *figs.* 1–3.
1866. " Neur. lithogr. schief., i: 14–19. *Pl.* 2, *fig.* 12; *pl.* 4, *figs.* 1–3.
1869. Weyenbergh. Tijdschr. v. ent., (2), iv: 234 [134].
1874. " Period. zool., i: 91.
1874. " Énum. syst. faune ent. mésoz., 5.
1886. Deichmüller. Ins. lith. schichten dresd. mus., 56–57. *Pl.* 4, *figs.* 4–6.
See also Anax buchii, etc.

978. Isophlebia helle. (Odonata.)

Locality: Solenhofen, Bavaria. Horizon: Jura.

1866.	Hagen.	Palaeontogr., xv: 76–79. *Pl.* 1, *fig.* 1.
1866.	"	Neur. lithogr. schief., i: 20–23. *Pl.* 1, *fig.* 1.
1869.	Weyenbergh.	Tijdschr. v. ent., (2), iv: 234 [134].
1874.	"	Perioód. zool., i: 92.
1874.	"	Énum. syst. faune ent. mésoz., 6.
1885.	Scudder.	Zittel, Handb. palaeont., i, th. ii: 775.
1886.	"	Zittel-Barrois, Traité de paléont., ii: 775.

See also Heterophlebia helle, Agrion latreillei, etc., Æschna münsteri, etc., Æschna antiqua, etc.

979. Libella ———. (Odonata.)

Compared with Libella grandis [Æschna grandis].

Locality: Solenhofen, Bavaria. Horizon: Jura.

1782.	Schmidel.	Fortges. vorst. merkw. verstein., 36. *Pl.* 19, *fig.* 2.
1784.	Schröter.	Neue litt. u. beytr., i: 410–411.

See also Æschna schmideli, Æschna antiqua, etc.

980. Libellula ———. (Odonata.)

Locality: Strensham, England. Horizon: Lower Lias.

1874.	Brodie.	Distr. corr. foss. ins., 19 (Libillula).

981. Libellula ———. (Odonata.)

Locality: Dobbertin, Mecklenburg. Horizon: Lower Jura.

1880.	E. Geinitz.	Zeitschr. deutsch. geol. gesellsch., 1880: 529. *Pl.* 22, *fig.* 16.

982. Libellula ———. (Odonata.)

Locality: Dobbertin, Mecklenburg. Horizon: Jura.

1883.	E. Geinitz.	Flötzform. Mecklenb., 31. *Pl.* 6, *fig.* 5.

983. Libellula ———. (Odonata.)

Locality: Solenhofen, Bavaria. Horizon: Jura.

1844.	Mantell.	Medals of creation, ii: 574. *Lign.* 122.
1854.	"	Medals of creation, 2d ed., ii: 551. *Lign.* 174.

984. Libellula? ——— (larva). (Odonata.)

Locality: Christian Malford, England. Horizon: Oxford clay.

1845.	Westwood.	Brodie, Foss. ins. sec. rocks, 36, 122. *Pl.* 4, *fig.* 13.

985. (Libellula) abscissa. (Odonata.)

Locality: Eichstadt, Bavaria. Horizon: Jura.

1862.	Hagen.	Palaeontogr. x: 107 (undescr.).
1869.	Weyenbergh.	Tijdschr. v. ent., (2), iv: 236.

See also ——— abscissa (Odonata, Libellulina).

986. Libellula antiqua. (Odonata.)

Locality: Vale of Wardour, England. Horizon: Purbecks.

1845.	Brodie.	Foss. ins. sec. rocks Engl., 33. *Pl.* 5, *fig.* 10.
1850.	Hagen.	Rev. odon. (Mém. soc. roy. sc. Liége, vi): 363.
1856.	Giebel.	Insect. d. vorwelt, 285.
1886.	Deichmüller.	Ins. lith. schichten dresd. mus., 34 (= Estemoa bubas?).

See also Estemoa bubas, etc., Estemoa densa, etc., Blattidium ——— Goldenb.

987. Libellula brevialata. (Odonata.)

Locality: Solenhofen, Bavaria. Horizon: Jura.

18—.	Münster.	MSS. Mentioned by Hagen, Palaeontogr., x: 106 (1862) **as perhaps belonging to Heterophlebia casta. The species has never been published under either name.**

See also Heterophlebia casta.

988. Libellula brodiei. (Odonata.)

Locality: Dumbleton, England. Horizon: Upper Lias.

1845.	Brodie.	Foss. ins. sec. rocks Engl., 101. *Pl.* 8, *fig.* 1.
1845.	Westwood.	Brodie, Foss. ins. sec. rocks Engl., 101, 127. *Pl.* 8, *fig.* 1.
1853.	Buckmann.	Ann. nat. hist., (2), xii: 436–438.
1856.	Giebel.	Insect. d. vorwelt, 285.
1871.	Phillips.	Geology of Oxford, 123.

See also Æschna brodiei, Gomphus brodiei, Gomphoides brodiei, Libellula (Heterophlebia) brodiei, L. (Æschna) brodiei, ——— brodiei (Odonata, Libellulina).

989. Libellula (Æschna) brodiei. (Odonata.)

Locality: Dobbertin, Mecklenburg. Horizon: Lias.

1884.	E. Geinitz.	Zeitschr. deutsch. geol. gesellsch., 1884: 581.

See also Libellula brodiei, etc.

990. Libellula (Heterophlebia) brodiei. (Odonata.)

Locality: Dumbleton, England. Horizon: Upper Lias.

1873.	Brodie.	Distr. corr. foss. ins., 15.

See also Libellula brodiei, etc.

991. Libellula decapitata. (Odonata.)

Locality: England. Horizon: Lower Lias.

1845.	Brodie.	Foss. ins. sec. rocks Engl. (unnamed). *Pl.* 9, *fig.* 1.
1850.	Selys.	MSS.
1850.	Hagen.	Rev. odon. (Mém. soc. roy. sc. Liége, vi): 364.
1856.	Giebel.	Insect. d. vorwelt, 285–286.

See also ——— decapitata (Odonata, Libellulina.)

992. (Libellula) densa. (Odonata.)

Locality: Eichstadt, Bavaria. Horizon: Jura.

1862.	Hagen.	Palaeontogr., x: 107 (undescr.).
1869.	Weyenbergh.	Tijdschr. v. ent., (2), iv: 235.

See also Estomoa densa, ——— densa (Odonata, Libellulina), Estemoa bubas, etc.

993. Libellula dislocata. (Odonata.)

Locality: Dumbleton, England. Horizon: Lias.

1871.	Phillips.	Geology of Oxford, 123.

See also Heterophlebia dislocata, etc.

994. Libellula (Heterophlebia) dislocata. (Odonata.)

Locality: Dumbleton, England. Horizon: Upper Lias.

1848.	Brodie.	Quart. journ. geol. soc. Lond., 5: 32-35. *Pl.* 2.

See also Heterophlebia dislocata, etc.

995. Libellula hopei. (Odonata.)

Locality: Strensham, Worcestershire, England. Horizon: Lower Lias, Insect Limestone.

1845. Brodie. Foss. ins. sec. rocks Engl., 71, 102. *Pl.* 10, *fig.* 3.
1871. Phillips. Geology of Oxford, 123.
See also Petalura hopei, Heterophlebia hopei, Æschna liassina, etc.

996. Libellula jurassica. (Odonata.)

Locality: Vale of Wardour, England. Horizon: Purbecks.

1845. Brodie. Foss. ins. sec. rocks Engl. (Lindenia sp.). *Pl.* 5, *fig.* 9.
1856. Giebel. Insect. d. vorwelt, 284.
See also Lindenia ——— Brodie, etc.

997. Libellula koehleri. (Odonata.)

Locality: Bavaria. Horizon: Jura.

1856. Giebel. Insect. d. vorwelt, 284–285.
See also Uropetala koehleri, etc.

998. Libellula liassica. (Odonata.)

Locality: England. Horizon: Lias.

1871. Phillips. Geology of Oxford, 123.
See also Æschna liassina, etc.

999. Libellula longialata. (Odonata.)

Locality: Solenhofen, Bavaria. Horizon: Jura.

1839. Münster. MSS.
1839. Germar. Verhandl. leop.-carol. akad. naturf., xix: 216–217. *Pl.* 23, *fig.* 15.
1862. Hagen. Palaeontogr., x: 111.
1863. Winkler. Catal. syst. coll. pal. mus. Teyl., 423.
See also Cymatophlebia longialata, etc.

1000. (Libellula) nævia. (Odonata.)

Localities: Solenhofen, Eichstadt, Bavaria. Horizon: Jura.

1862. Hagen. Palaeontogr., x: 107 (undescr.).
1869. Weyenbergh. Tijdschr. v. ent., (2), iv: 236.
See also ——— nævia (Odonata, Libellulina).

1001. Libellula petrificata. (Odonata.)

Locality: Vale of Wardour, England. Horizon: Purbecks.

1845. Brodie. Foss. ins. sec. rocks Engl. (Lindenia sp.). *Pl.* 5, *fig.* 8.
1856. Giebel. Insect. d. vorwelt, 284 (petrificatus).
See also Lindenia ——— Brodie, etc.

1002. (Libellula) valga. (Odonata.)

Localities: Eichstadt, Solenhofen, Bavaria. Horizon: Jura.

1862. Hagen. Palaeontogr., x: 107 (undescr.).
1869. Weyenbergh. Tijdschr. v. ent., (2), iv: 236.
1874. " Period. zool., i: 95.
1874. " Énum. syst. faune ent. mésoz., 9.
See also ——— valga (Odonata, Libellulina).

1003. **Libellula westwoodii.** (Odonata.)

Locality: Near Oxford, England. Horizon: Stonesfield Slate.

1866. Phillips. Geol. mag., iii: 97–99. *Pl.* 6, *fig. a–c.*
1871. " Geology of Oxford, 173. *Digr.* 36.

1004. **Libellulites ——.** (Odonata.)

Locality: Solenhofen, Bavaria. Horizon: Jura.

1840. Charpentier. Libell. europ., 170–173. *Pl.* 48, *fig.* 1.
See also Anax buchii, etc.

1005. **Libellulium agrias.**

Locality: Durdlestone Bay, England. Horizon: Lower Purbecks.

1854. Westwood. Quart. journ. geol. soc. Lond., x: 387, 393–394. *Pl.* 15, *fig.* 4.
1856. Giebel. Insect. d. vorwelt, 286.

1006. **Libellulium kaupii.**

Locality: Durdlestone Bay, England. Horizon: Lower Purbecks.

1854. Westwood. Quart. journ. geol. soc. Lond., x: 387, 395. *Pl.* 17, *fig.* 21.
1856. Giebel. Insect. d. vorwelt, 286.

Libillula ——. See Libellula —— Brodie.

1007. **Lindenia ——.** (Odonata.)

Locality: Vale of Wardour, England. Horizon: Purbecks.

1845. Brodie. Foss. ins. sec. rocks Engl., 33. *Pl.* 5, *figs.* 8, 9.
See also Libellula petrificata, Gomphus petrificatus, Libellula jurassica.

1008. **Lindenia ? koehleri.** (Odonata.)

Locality: Bavaria. Horizon: Jura.

1850. Selys. Rev. odon. (Mém. soc. roy. sc. Liége, vi): 366 (koeleri).
See also Uropetala koehleri, etc.

Lindenia koeleri. See Lindenia koehleri.

1009. **Meloe hoernesi.** (Termitina.)

Locality: England. Horizon: Wealden.

1845. Brodie. Foss. ins. sec. rocks Engl. (unnamed). *Pl.* 2, *fig.* 12.
1856. Giebel. Insect. d. vorwelt, 106.
See also Termes grandævus, etc.

1010. **Mesobætis sibirica.** (Ephemeridæ.)

Locality: Ust Balei, Siberia. Horizon: Lias.

1889. Brauer-Redtenb.-Ganglb. Mém. acad. sc. St.-Pétersb., (7), xxxvi, No. 15: 5. *Pl.* [1], *fig.* 3.

1011. **Mesoleuctra gracilis** (nymph). (Perlina.)

Compared with Leuctra fusciventris.

Locality: Ust Balei, Siberia. Horizon: Lias.

1889. Brauer-Redtenb.-Ganglb. Mém. acad. sc. St.-Pétersb., (7), xxxvi, No. 15: 9–10. *Pl.* [2], *figs.* 11*a–d*.

1012. **Mesonemura maakii.** (Perlina.)

Compared with Tæniopteryx nebulosa.

Locality: Ust Balei, Siberia. Horizon: Lias.

1889.	Brauer-Redtenb.-Ganglb.	Mém. acad. sc. St.-Pétersb., (7), xxxvi, No. 15: 11. *Pl.* [2], *fig.* 13.

1013. **Mesoneta antiqua.** (Ephemeridæ.)

Compared with Chirotonetes.

Locality: Ust Balei, Siberia. Horizon: Lias.

1889.	Brauer-Redtenb.-Ganglb.	Mém. acad. sc. St.-Pétersb., (7), xxxvi, No. 15: 4–5. *Pl.* [1], *fig.* 2*ab*.

1014. **Mormolucoides articulatus** (larva). (Sialina.)

Locality: Turner's Falls, Mass. Horizon: Trias.

1858.	Hitchcock.	Ichn. N. Engl., 7–8. *Pl.* 7, *figs.* 3, 4.
1858.	Dana.	Hitchcock, Ichn. N. Engl., 7. *Fig.* on *p.* 8.
1867.	Scudder.	Proc. Bost. soc. nat. hist., xi: 140.
1868.	"	Geol. mag., v: 218–220.
1885.	"	Zittel, Handb. palaeont., i, th. ii: 776, 827. *Fig.* 980.
1886.	"	Zittel-Barrois, Traité de paléont., ii: 776, 829. *Fig.* 997.
1886.	"	Bull. U. S. geol. surv., No. 31: 56, 109.
1886.	"	Mem. Bost. soc. nat. hist., iii: 431–438. *Pl.* 45, *figs.* 1–16. *Fig.* on *p.* 431.
1888.	Vidal.	Ins. y plantas, 14.
1889.	Lesley.	Dict. foss. Penns., i: 423–424. *Fig.*
1890.	Scudder.	Foss. ins. N. A., i: 323–330. *Pl.* 19. *Fig.* on *p.* 323.

See also Palephemera mediæva.

1015. **Myrmeleon** ———. (Hemerobina.)

Locality: England. Horizon: Lias.

1845.	Westwood.	Brodie, Foss. ins. sec. rocks Engl., 126. *Pl.* 10, *fig.* 5.

1016. **Myrmeleon ?** ———. (Hemerobina.)

Locality: Binton, England. Horizon: Lower Lias.

1873.	Brodie.	Distr. corr. foss. ins., 15.

1017. **Myrmeleon extinctus.** (Hemerobina.)

Locality: Solenhofen, Bavaria. Horizon: Jura.

1869.	Weyenbergh.	Arch. mus. Teyl., ii: 265. *Pl.* 35, *figs.* 16, 16*a*.
1869.	"	Ins. foss. calc. lithogr., 19. *Pl.* 2, *figs.* 16, 16*a*.
1869.	"	Tijdschr. v. ent., (2), iv: 236.
1874.	"	Périód. zool., i: 97.
1874.	"	Énum. syst. faune ent. mésoz., 11.

Nemoura ———. See Phryganidium (Nemoura) ———.

1018. **Nymphes fossilis.** (Hemerobina.)

Locality: Eichstadt, Bavaria. Horizon: Jura.

1862.	Hagen.	Palaeontogr., x: 108 (undescr.).
1866.	"	Stett. entom. zeit., xxvii: 453.
1869	Weyenbergh.	Tijdschr. v. ent., (2), iv: 236.

1019. Orthophlebia ——. (Panorpidæ.)

Locality: Brown's Wood and Somersetshire, England. Horizon: Lower Lias.

1873. Brodie. Distr. corr. foss. ins., 15.

1020. Orthophlebia ——. (Panorpidæ.)

Locality: England. Horizon: Wealden.

1845. Westwood. Brodie, Foss. ins. sec. rocks Engl., 119. *Pl.* 5, *figs.* 12, 13.
See also Panorpa gracilis, Orthophlebia bifurcata.

1021. Orthophlebia ——. (Panorpidæ.)

Locality: England. Horizon: Lower Lias, Insect Limestone.

1845. Westwood. Brodie, Foss. ins. sec. rocks Engl., 126. *Pl.* 8, *figs.* 3, 5, 6, 14.
See also Chauliodes —— Brodie, 1845, etc., Orthophlebia longissima.

1022. Orthophlebia bifurcata. (Panorpidæ.)

Locality: Vale of Wardour, England. Horizon: Purbecks.

1845. Brodie. Foss. ins. sec. rocks Engl. (without specific name). *Pl.* 5, *fig.* 12.
1856. Giebel. Insect. d. vorwelt, 260.
See also Orthophlebia —— Westw.

1023. Orthophlebia communis. (Panorpidæ.)

Localities: Wainlode, Forthampton, Strensham, Cracombe, Bidford, Copt Heath near Knowle, England. Horizon: Lower Lias, Insect Limestone.

1845. Westwood. Brodie, Foss. ins. sec. rocks Engl., 102, 126. *Pl.* 8, *figs.* 7, 8, 9.
1852. Bronn. Lethæa geogn., 3^{e} aufl., ii, th. ii: 430. *Pl.* 24', *fig.* 19'.
1856. Giebel. Insect. d. vorwelt, 260.
1871. Phillips. Geology of Oxford, 123.
1874. Brodie. Quart. journ. geol. soc. Lond., xxx: 748.
1875. " Lower Lias Eatington, etc., 10.
1885. Scudder. Zittel, Handb. palaeont., i, th. ii: 777. *Fig.* 983.
1886. " Zittel-Barrois, Traité de paléont., ii: 777. *Fig.* 1000.

1024. Orthophlebia furcata. (Panorpidæ.)

Locality: Aust, England. Horizon: Lower Lias.

1845. Brodie. Foss. ins. sec. rocks Engl., 127 (unnamed). *Pl.* 9, *fig.* 16.
1856. Giebel. Insect. d. vorwelt, 261.
See also O. (Phryganidium) furcata, Phryganidium minimum.

1025. Orthophlebia (Phryganidium) furcata. (Panorpidæ.)

Locality: Dobbertin, Mecklenburg. Horizon: Lias.

1884. E. Geinitz. Zeitschr. deutsch. geol. gesellsch., 1884: 573. *Pl.* 13, *figs.* 5, 6.
See also O. furcata, Phryganidium minimum.

1026. Orthophlebia intermedia. (Panorpidæ.)

Locality: England. Horizon: Lower Lias.

1845. Brodie. Foss. ins. sec. rocks Engl. (allied to Chauliodes). *Pl.* 10, *fig.* 10.
1856. Giebel. Insect. d. vorwelt, 261.
See also Chauliodes —— Brodie, 1845, etc.

1027. Orthophlebia (Phryganidium) intermedia. (Panorpidæ.)

Locality: Dobbertin, Mecklenburg. Horizon; Lias.

1884. E. Geinitz. Zeitschr. deutsch. geol. gesellsch., 1884: 574-575 (= O. lata, O. similis). *Pl.* 13, *fig.* 8.
See also Chauliodes —— Brodie, 1845, etc.

1028. Orthophlebia lata. (Panorpidæ.)

Locality: England. Horizon: Lower Lias.

1845. Brodie. Foss. ins. sec. rocks Engl. (allied to Chauliodes). *Pl.* 10, *fig.* 11.
1856. Giebel. Insect. d. vorwelt, 261.
See also Chauliodes ——— Brodie, 1845, etc.

1029. Orthophlebia liasiana. (Panorpidæ.)

Locality: Aust, England. Horizon: Lower Lias.

1845. Brodie. Foss. ins. sec. rocks Engl., 127 (unnamed). *Pl.* 9, *fig.* 17.
1856. Giebel. Insect. d. vorwelt, 261.

1030. Orthophlebia longissima. (Panorpidæ.)

Locality: England. Horizon: Lower Lias.

1845. Brodie. Foss. ins. sec. rocks Engl. (without specific name). *Pl.* 8, *fig.* 5.
1856. Giebel. Insect. d. vorwelt, 260.
See also Orthophlebia ——— Brodie, 1845, etc.

1031. Orthophlebia megapolitana. (Panorpidæ.)

Locality: Dobbertin, Mecklenburg. Horizon: Jura.

1883. E. Geinitz. Flötzform. Mecklenb., 31. *Pl.* 6, *fig.* 3.
1884. " Zeitschr. deutsch. geol. gesellsch., 1884: 572–573. *Pl.* 13, *figs.* 3, 4.

1032. Orthophlebia minuta. (Panorpidæ.)

Locality: Vale of Wardour, England. Horizon: Purbecks.

1845. Brodie. Foss. ins. sec. rocks Engl. (Corydalis sp.). *Pl.* 5, *fig.* 16.
1856. Giebel. Insect. d. vorwelt, 260.
See also Corydalis ———, etc.

1033. Orthophlebia parallela. (Panorpidæ.)

Locality: England. Horizon: Lower Lias.

1845. Brodie. Foss. ins. sec. rocks Engl. (allied to Chauliodes). *Pl.* 10, *fig.* 9.
1856. Giebel. Insect. d. vorwelt, 260.
See also Chauliodes ——— Brodie, 1845, etc.

1034. Orthophlebia parvula. (Panorpidæ.)

Locality: Dobbertin, Mecklenburg. Horizon: Lias.

1884. E. Geinitz. Zeitschr. deutsch. geol. gesellsch., 1884: 573–574. *Pl.* 13, *fig.* 7.

1035. Orthophlebia similis. (Panorpidæ.)

Locality: England. Horizon: Lower Lias.

1845. Brodie. Foss. ins. sec. rocks Engl. (allied to Chauliodes). *Pl.* 10, *fig.* 12.
1856. Giebel. Insect. d. vorwelt, 261.
See also Chauliodes ——— Brodie, 1845, etc.

1036. Palæophlebia synlestoides. (Odonata.)

Locality: Ust Balei, Siberia, Horizon: Lias.

1889. Brauer - Redtenb.-Ganglb. Mém. acad. sc. St.-Pétersb., (7), xxxvi, No. 15: 6–7. *Pl.* [1], *fig.* 5.

1037. Palephemera mediæva. (Sialina.)

Locality: Turner's Falls, Mass. Horizon: Trias.

1862. Hitchcock. Amer. journ. sc., (2), xxxiii: 452.
1871. Packard. Bull. Essex inst., iii: 1.
See also Mormolucoides articulatus.

1038. Palpares? ——. (Myrmeleontidæ.)

Locality: Eichstadt, Bavaria. Horizon: Jura.

1886. Deichmüller. Ins. lith. schichten dresd. mus., 59.

1039. Panorpa ——. (Panorpidæ.)

Locality: England. Horizon: Lower Lias.

1845. Murchison. Geol. Cheltenham, 82. *Pl.* 9, *fig.* 6.

1040. Panorpa? ——. (Panorpidæ.)

Locality: Durdlestone Bay, England. Horizon: Lower Purbecks.

1854. Westwood. Quart. journ. geol. soc. Lond., x: 388.

1041. Panorpa gracilis. (Panorpidæ.)

Locality: Vale of Wardour, England. Horizon: Purbecks.

1845. Brodie. Foss. ins. sec. rocks Engl. (Orthoplebia sp.). *Pl.* 5, *fig.* 18.
1856. Giebel. Insect. d. vorwelt, 258.
See also Orthophlebia —— Westw.

1042. Panorpa hartungi. (Panorpidæ.)

Locality: Ust Balei, Siberia. Horizon: Lias.

1889. Brauer-Redtenb-Ganglb. Mém. acad. sc. St.-Pétersb., (7), xxxvi, No. 15: 16. *Pl.* 2, *fig.* 20.

1043. Panorpa liassica. (Panorpidæ.)

Compared with P. germanica.

Locality: Wainlode Cliff, England. Horizon: Lias.

1844. Mantell. Medals of creation, ii: 576. *Lign.* 123, *figs.* 1, 2.
1854. " Medals of creation, 2d ed., ii: 553. *Lign.* 180, *figs.* 1, 2.

Panorpidium ——. See II, ORTHOPT., Idem.

1044. Panorpidium tessellatum var.

Locality: Durdlestone Bay, England. Horizon: Lower Purbecks.

1854. Westwood. Quart. journ. geol. soc. Lond., x: 387, 395. *Pl.* 17, *fig.* 12.
See also Elcana beyrichi; also II, ORTHOPT., Panorpidium tessellatum.

1045. Petalia longialata. (Odonata.)

Localities: Eichstadt, Solenhofen, Bavaria. Horizon: Jura.

1862. Hagen. Palaeontogr., x: 106, 127-133. *Pl.* 13, *figs.* 1, 2.
1869. Weyenbergh. Tijdschr v. ent., (2), iv: 235.
1874. " Periód. zool., i: 93.
1874. " Énum. syst. faune ent. mésoz., 7.
1885. Scudder. Zittel, Handb. palaeont., i, th. ii: 775. *Fig.* 978.
1886. " Zittel-Barrois, Traité de paléont., ii: 775. *Fig.* 995.
1889. Nicholson. Man. palæont., 3d ed., i: 598. *Fig.* 448.
See also Cymatophlebia longialata, etc.

1046. (Petalura) differens. (Odonata.)

Locality: Eichstadt, Bavaria. Horizon: Jura.

1862. Hagen. Palaeontogr., x: 107 (undescr.).
1869. Weyenbergh. Tijdschr. v. ent., (2), iv: 235 (undescr.).

1047. Petalura eximia. (Odonata.)

Locality: Solenhofen, Bavaria. Horizon: Jura.

1862. Hagen. Palaeontogr., x: 107 (undescr.).
1869. Weyenbergh. Tijdschr. v. ent., (2), iv: 235.
See also Æschna gigantea, etc.

1048. Petalura gigantea. (Odonata.)

Localities: Eichstadt, Solenhofen, Bavaria: Horizon: Jura.

1862. Hagen. Palaeontogr., x: 107 (undescr.).
1874. Weyenbergh. Periód. zool., i: 94.
1874. " Énum. syst. faune ent. mésoz., 8.
See also Æschna gigantea, etc.

1049. Petalura hopei. (Odonata.)

Locality: Cheltenham, England. Horizon: Lias.

1856. Selys. Rev. odon. (Mém. soc. roy. sc. Liége, vi): 359, note.
1859. Hagen. Palaeontogr., viii: 26.
See also Libellula hopei, Æschna liassina, etc

1050. Petalura intermedia. (Odonata.)

Localities: Eichstadt, Solenhofen, Bavaria. Horizon: Jura.

1862. Hagen. Palaeontogr., x: 107 (undescr.)
1869. Weyenbergh. Tijdschr. v. ent., (2), iv: 235.
1874. " Periód. zool., i: 94.
1874. " Énum. syst. faune ent. mésoz., 8.
See also Æschna gigantea, etc.

1051. Petalura latialata. (Odonata.)

Locality: Eichstadt, Bavaria. Horizon: Jura.

1862. Münster. MSS.
1862. Hagen. Palaeontogr., x: 107 (undescr.).
1869. Weyenbergh. Tijdschr. v. ent., (2), iv: 235.
See also Æschna gigantea, etc.

1052. Petalura liassina. (Odonata.)

Locality: England. Horizon: Lower Lias.

1856. Hagen. Rev. odon. (Mém. soc. roy. sc. Liége, vi): 359–360.
1856. Selys. Rev. odon. (Mém. soc. roy. sc. Liége, vi): 359, note.
See also Æschna liassina, etc.

1053. (Petalura) münsteri. (Odonata.)

Localities: Eichstadt, Solenhofen, Bavaria. Horizon: Jura.

1862. Hagen. Palaeontogr., x: 107.
1869. Weyenbergh. Tijdschr. v. ent., (2), iv: 235.
1874. " Periód. zool., i: 94.
1874. " Énum. syst. faune ent. mésoz., 8.
See also Æschna münsteri, etc., Æschna antiqua, etc.

1054. (Petalura) varia. (Odonata.)

Localities: Eichstadt, Solenhofen, Bavaria. Horizon: Jura.

1862. Hagen. Palaeontogr., x: 107 (undescr.).
1869. Weyenbergh. Tijdschr. v. ent., (2), iv: 235.
1874. " Periód zool., i: 95.
1874. " Énum. syst. faune ent. mésoz., 9.
See also Uropetala koehleri, etc.*

1055. Petalura? wittei. (Odonata.)

Locality: Bavaria. Horizon: Jura.

1862. Hagen. Palaeontogr., x: 133–136. *Pl.* 13, *fig.* 3.
1862. " Palaeontogr., x: 136 (=Æschna münsteri Germ.).
See also Æschna wittei, etc., Æschna antiqua, etc.

1056. Philonthus kneri. (Termitina.)

Locality: Vale of Wardour, England. Horizon: Purbecks.

1845. Brodie. Foss. ins. sec. rock Engl., 32 (unnamed). *Pl.* 2, *fig.* 2.
1856. Giebel. Insect. d. vorwelt, 72–73.
1860. Hagen. Linn. entom., xii: 297 (a Termes).
See also Termes grandævus, etc., ——— ——— (Staphylinidæ) Brodie, ii: 2.

Phryganæa micacea. See Phryganea micacea.

1057. Phryganea ———. (Trichoptera.)

Locality: Durdlestone Bay, England. Horizon: Lower Purbecks.

1854. Westwood. Quart. journ. geol. soc. Lond., x: 390. *Pl.* 18, *figs.* 25, 28.

1058. Phryganea micacea (larval case). (Trichoptera.)

Localities: Kounic, Vyšerovic, Bohemia. Horizon: Cretaceous.

1869. Frič. Arch. naturf. landesdurchf. Böhm., i, th. ii: 188. *Pl.* 3, *fig.* 6.
1884. " Vesmír, xiii: 205–206. *Fig.* 6.
1882. " Mojs., Beitr. palaeont. Oesterr.-Ung., ii: 7 (Phryganæa). *Pl.* 2, *fig.* 8.
1882. " Foss. arthr. steink. u. kreidef. Böhmens, 7. *Pl.* 2, *fig.* 8.

Phryganeidium pytho. See Phryganidium pytho.

1059. Phryganidium (Nemoura) ———. (Trichoptera.)

Locality: Dobbertin, Mecklenburg. Horizon: Lias.

1884. E. Geinitz. Zeitschr. deutsch. geol. gesellsch., 1884: 576. *Pl.* 13, *fig.* 11.

1060. Phryganidium balticum. (Trichoptera.)

Locality: Dobbertin, Mecklenburg. Horizon: Lower Jura.

1880. E. Geinitz. Zeitschr. deutsch. geol. gesellsch., 1880: 527-528. *Pl.* 22, *fig.* 13.
1884. " Zeitschr. deutsch. geol. gesellsch., 1884: 575.

1061. Phryganidium balticum var. simplex. (Trichoptera.)

Locality: Dobbertin, Mecklenburg. Horizon: Lower Jura.

1880. E. Geinitz. Zeitschr. deutsch. geol. gesellsch., 1880: 528. *Pl.* 22, *fig.* 14.

Phryganidium furcatum. See Orthoplebia (Phryganidium) furcata.

hryganidium intermedium. See Orthophlebia (Phryganidium) intermedia.

1062. Phryganidium minimum. (Trichoptera.)

Locality: Dobbertin, Mecklenburg. Horizon: Jura.

1883. E. Geinitz. Flötzform. Mecklenb., 31. *Pl.* 6, *fig.* 4.
See also Orthophlebia (Phryganidium) furcata, Orthophlebia furcata.

1063. Phryganidium (Polycentropus) perlæforme. (Trichoptera.)

Locality: Dobbertin, Mecklenburg. Horizon: Lias.

1884. E. Geinitz. Zeitschr. deutsch. geol. gesellsch., 1884: 575–576. *Pl.* 13, *fig.* 9.

1064. Phryganidium pytho. (Trichoptera.)

Locality: Durdlestone Bay, England. Horizon: Lower Purbecks.

1854. Westwood. Quart. journ. geol. soc. Lond., x: 390, 396 (Phryganeidium). *Pl.* 18, *fig.* 31.
1864. Hagen. Phryg. synops. synom., 73.
1864. " Verhandl. zool.-bot. gesellsch. Wien, 1864: 871.
See also Chimarrha pytho.

1065. Phryganidium (Hydropsyche) seebachi. (Trichoptera.)

Locality: Dobbertin, Mecklenburg. Horizon: Lias.

1884. E. Geinitz. Zeitschr. deutsch. geol. gesellsch., 1884: 576. *Pl.* 13, *fig.* 10.

1066. Platyperla platypoda. (Perlina.)

Compared with Nemura variegata.

Locality: Ust Balei, Siberia. Horizon: Lias.

1889. Brauer-Redtenb.-Ganglb. Mém. acad. sc. St.-Pétersb., (7), xxxvi, No. 15: 10–11. *Pl.* [2], *fig.* 12*ab*.

Polycentropus perlæformis. See Phryganidium (Polycentropus) perlæforme.

Polystœchetes ———. See Polystœchotes ———.

1067. Polystœchotes ———.

Locality: England. Horizon: Lias.

1874. Brodie. Distr. corr. foss. ins., 19 (Polystœchetes).

1068. Prognatha crassa. (Termitina.)

Locality: Vale of Wardour, England. Horizon: Purbecks.

1845. Brodie. Foss. ins. sec. rocks Engl., 32 (unnamed). *Pl.* 2, *fig.* 3.
1856. Giebel. Insect. d. vorwelt, 73.
See also Termes grandævus, etc., ——— ——— (Staphylinidæ?) Brodie, ii: 3.

1069. Protolindenia wittei. (Odonata.)

Locality: Eichstadt, Bavaria. Horizon: Jura.

1886. Deichmüller. Ins. lith. schichten dresd. mus., 37–42. *Pl.* 4, *figs.* 1, 2, 9, 10.
See also Æschna wittei, etc., Æschna antiqua, etc.

1070. Rapha liasina. (Ephemeridæ.)

Locality: Strensham, England. Horizon: Lower Lias.

1856. Giebel. Insect. d. vorwelt, 290.
1886. Deichmüller. Ins. lith. schichten dresd. mus., 17 (cf. Elcana).
See also Ephemera ——— Brodie, 1845.

1071. **Raphidium brephos.** (Sialina.)

Locality: Durdlestone Bay, England. Horizon: Lower Purbecks.

1854. Westwood. Quart. journ. geol. soc. Lond., x: 395. *Pl.* 17, *fig.* 16.
See also Ela brephos.

1072. **Samarura angusta** (larva). (Odonata.)

Locality: Ust Balei, Siberia. Horizon: Lias.

1889. Brauer-Redtenb.-Ganglb. Mém. acad. sc. St.-Pétersb., (7), xxxvi, No. 15: 9. *Pl.* [1], *fig.* 9.

1073. **Samarura gigantea** (larva). (Odonata.)

Locality: Ust Balei, Siberia. Horizon: Lias.

1889. Brauer-Redtenb.-Ganglb. Mém. acad. sc. St.-Pétersb. (7), xxxvi, No. 15: 7–8. *Pl.* [1], *figs.* 6, 6*a–d*.

1074. **Samarura minor** (larva). (Odonata.)

Locality: Ust Balei, Siberia. Horizon: Lias.

1889. Brauer-Redtenb.-Ganglb. Mém. acad. sc. St.-Pétersb., (7), xxxvi, No. 15: 8. *Pl.* [1], *figs.* 7*a–c*.

1075. **Samarura pulla** (larva). (Odonata.)

Locality: Ust Balei, Siberia. Horizon: Lias.

1889. Brauer-Redtenb.-Ganglb. Mém. acad. sc. St.-Pétersb., (7). xxxvi, No. 15: 9. *Pl.* [1], *figs.* 8, 8*bc*.

1076. **Samarura rotundata** (larva). (Odonata.)

Locality: Ust Balei, Siberia. Horizon: Lias.

1889. Brauer-Redtenb.-Ganglb. Mém. acad. sc. St.-Pétersb., (7), xxxvi, No. 15: 9. *Pl.* [1], *fig.* 10.

1077. **Sciara prisca.** (Ephemeridæ.)

Locality: Solenhofen, Bavaria. Horizon: Jura.

1839. Münster. MSS.
1839. Germar. Verhandl. leop.-carol. acad. naturf., xix: 211–212. *Pl.* 23, *fig.* 11.
1852. Giebel. Deutschl. petref., 640.
1856. " Insect. d. vorwelt, 230.
1862. Hagen. Palaeontogr., x: 111 (Ephemera).
1877. Assmann. Ber. versamml. deutsch. naturf., l: 192.
See also Ephemera prisca.

Sialium sipylus. See II, ORTHOPTERA, Idem.

1078. **Stenophlebia æqualis.** (Odonata.)

Locality: Solenhofen, Bavaria. Horizon: Jura.

1866. Hagen. Palaeontogr., xv: 86–90. *Pl.* 1, *figs.* 2–4.
1866. " Neur. lithogr. schief., i: 30–34. *Pl.* 1, *figs.* 2–4.
1874. Weyenbergh. Périód. zool., i: 92.
1874. " Énum. syst. faune ent. mésoz., 6.
1885. Scudder. Zittel, Handb. palaeont., i, th. ii: 775. *Fig.* 977.
1886. " Zittel-Barrois, Traité de paléont., ii: 775. *Fig.* 994.
1886. Deichmüller. Ins. lith. schichten dresd. mus., 43–45. *Pl.* 4, *fig.* 8.
See also Heterophlebia æqualis.

1079. **Stenophlebia amphitrite.** (Odonata.)

Locality: Solenhofen, Bavaria. Horizon: Jura.

1866. Hagen. Palaeontogr., xv: 83–86. *Pl.* 3, *fig.* 1.
1866. " Neur. lithogr. schief., i: 27–30. *Pl.* 3, *fig.* 1.
1869. Weyenbergh. Tijdschr. v. ent., (2), iv: 235.
1886. Deichmüller. Ins. lith. schichten dresd. mus., 43.

See also Heterophlebia amphitrite.

1080. **Stenophlebia phryne.** (Odonata.)

Locality: Solenhofen, Bavaria. Horizon: Jura.

1866. Hagen. Palaeontogr., xv: 91–92. *Pl.* 1, *fig.* 5.
1866. " Neur. lithogr. schief., i: 35–36. *Pl.* 1, *fig.* 5.
1886. Weyenbergh. Tijdschr. v. ent., (2), iv: 235.
1886. Deichmüller. Ins. lith. schichten dresd. mus., 43–45. *Pl.* 4, *fig.* 4.

See also Heterophlebia phryne, etc.

1081. **Tarsophlebia eximia.** (Odonata.)

Locality: Solenhofen, Bavaria. Horizon: Jura.

1866. Hagen. Palaeontogr., xv: 65–68. *Pl.* 2, *figs.* 1–6, 11.
1866. " Neur. lithogr. schief., i: 9–12. *Pl.* 2, *figs.* 1–6, 11.
1869. Weyenbergh. Tijdschr. v. ent., (2), iv: 235.
1886. Deichmüller. Ins. lith. schichten dresd. mus., 57–58.

See also Heterophlebia eximia, Euphæa longiventris.

1082. **Tarsophlebia westwoodi.** (Odonata.)

Locality: Dumbleton, England. Horizon: Lias.

1866. Hagen. Palaeontogr., xv: 65. *Pl.* 2, *fig.* 10.
1866. " Neur. lithogr. schief., i: 9. *Pl.* 2, *fig.* 10.

See also Heterophlebia westwoodi.

1083. **Termes?** ———.

Locality: Vale of Wardour, England. Horizon: Purbecks.

1845. Westwood. Brodie, Foss. ins. sec. rocks Engl., 116 (or staphylinid?). *Pl.* 2, *fig.* 2.

1084. **Termes fossilis.** (Termitina.)

Locality: Solenhofen, Bavaria. Horizon: Jura.

1874. Weyenbergh. Periód. zool., i: 86, 96. *Pl.* 3, *fig.* 15.
1874. " Énum. syst. faune ent. mésoz., 10.

1085. **Termes grandævus.** (Termitina.)

Locality: Vale of Wardour, England. Horizon: Purbecks.

1845. Brodie. Foss. ins. sec. rocks Engl., 33, 119. *Pl.* 2, *fig.* 5.
1858. Hagen. Linn. entom., xii: 181–182, 297
1858. " Catal. neuropt. Brit. mus., 25.

See also Termes (Eutermes) grandævus, Meloe hoernsii, **Flata** haidingeri, Philonthus kneri, Prognatha crassa, ——— ——— Brodie, ii: 2, ii: 3.

1086 **Termes (Eutermes) grandævus.** (Termitina.)

Locality: Vale of Wardour, England. Horizon: Purbecks.

1856. Giebel. Insect. d. vorwelt, 295–296.

See also Termes grandævus, etc.

1087. **Termes heros.** (Termitina.)

Localities: Eichstadt, Solenhofen, Bavaria. Horizon: Jura.

1862.	Hagen.	Palaeontogr., x: 107, 114–115. *Pl.* 15, *fig.* 1.
1863.	Winkler.	Catal. syst. coll. pal. mus. Teyl., 424.
1869.	Weyenbergh.	Tijdschr. v. ent., (2), iv: 236.
1874.	“	Periód. zool., i: 95.
1874.	“	Énum. syst. faune ent. mésoz., 9.
1885.	Scudder.	Zittel, Handb. palaeont., i, th. ii: 772.
1886.	“	Zittel-Barrois, Traité de paléont., ii: 772.
1886.	Deichmüller.	Ins. lith. schichten dresd. mus., 29.
1888.	Oppenheim.	Palaeontogr., xxxiv: 226.

Termes kneri. See Philonthus kneri.

1088. **Termes lithophilus.** (Termitina.)

Localities: Eichstadt, Solenhofen, Bavaria. Horizon: Jura.

1862.	Hagen.	Palaeontogr., x: 107, 115.
1869.	Weyenbergh.	Tijdschr. v. ent., (2), iv: 236.
1874.	“	Periód. zool., i: 95.
1874.	“	Énum. syst. faune ent. mésoz., 9.
1885.	Scudder.	Zittel, Handb. palaeont., i, th. ii: 772.
1886.	“	Zittel-Barrois, Traité de paléont., ii: 772.
1886.	Deichmüller.	Ins. lith. schichten dresd. mus., 29.
1888.	Oppenheim.	Palaeontogr., xxxiv: 226.

See also Tineites lithophilus.

1089. **Termes plagiatus.** (Termitina.)

Locality: Schambelen, Switzerland. Horizon: Lias.

1858.	Heer.	Hagen, Linn. entom., xii: 181 (undescr.).

1090. **Termes troglodytes.** (Termitina.)

Locality: Schambelen, Switzerland. Horizon: Lias.

1858.	Heer.	Hagen, Linn. entom., xii: 181 (undescr.).

1091. **Termitidium ignotum.** (Termitina.)

Locality: Durdlestone Bay, England. Horizon: Middle Purbecks.

1854.	Westwood.	Quart. journ. geol. soc. Lond., x: 384, 394. *Pl.* 15, *fig.* 16.

See also Hagla ignota.

1092. **Tineites lithophilus.** (Termitina.)

Locality: Eichstadt, Bavaria. Horizon: Jura.

1842.	Germar.	Münst., Beitr. z. petref., v: 88–89. *Pl.* 9, *fig.* 8.
1850.	Heer.	Verhandl. schweiz. gesellsch. ges. naturw., xxxiv: 81 (refers it to Termes).
1850.	“	Geschichte d. insekt., 4.
1850.	“	Neues jahrb. f. min., 1850: 18.
1850.	“	Quart. journ. geol. soc. Lond., vi: 68.
1852.	Giebel.	Deutschl. petref., 644.
1856.	“	Insect. d. vorwelt, 192, 497.
1856.	Hagen.	Berendt, Bernst. befindl. organ. reste vorw., ii, th. i: 48 (refers it to Termes).
1862.	“	Palaeontogr., x: 113 (certainly a Termes).
1877.	Assmann.	Ber. versamml. deutsch. naturf., i: 192 (a Termes).
1885.	Scudder.	Zittel, Handb. palaeont., i, th. ii: 813 (a Termes).
1886.	“	Zittel-Barrois, Traité de paléont., ii: 814 (a Termes).
1886.	“	Bull. U. S. geol. surv., No. 31: 95

See also Termes lithophilus.

1093. **Trichopteridium gracile.**

Locality: Dobbertin, Mecklenburg. Horizon: Lower Jura.

1880. E. Geinitz. Zeitschr. deutsch. geol. gesellsch., 1880: 528. *Pl.* 22, *fig.* 15.
1884. " Zeitschr. deutsch. geol. gesellsch., 1884: 576.

1094. **Uropetala koehleri.** (Odonata.)

Locality: Eichstadt, Bavaria. Horizon: Jura.

1886. Deichmüller. Ins. lith. schichten dresd. mus., 52–56. *Pl.* 4, *figs.* 3, 11, 12.

See also Gomphus koehleri, Lindenia koehleri, Libellula koehleri, Petalura varia Æschna —— Koehler.

1095. **Zalmona brodiei.**

Locality: Vale of Wardour, England. Horizon: Purbecks.

1845. Brodie. Foss. ins. sec. rocks Engl. (Corydalis sp.). *Pl.* 5, *fig.* 13.
1854. Goldenberg. Palaeontogr., iv (Corydalis). *Pl.* 6, *fig.* 4.
1854. " Foss. ins. Saarbr. (Corydalis). *Pl.* 4, *fig.* 4
1856. Giebel. Insect. d. vorwelt, 266.

See also Corydalis ——, etc.

HEMIPTERA.

1096. —— ——.

Localities: Forthampton, Apperley, Wainlode, England. Horizon: Lower Lias.

1873. Brodie. Distr. corr. foss. ins., 16.

1097. —— ——.

Locality: Weissig, Germany. Horizon: Lower Lias.

1873. E. Geinitz. Neues jahrb. min., 1873: 694. *Pl.* 3, *fig.* 3.
1873. " Verstein. unter. dyas Weiss., 4. *Pl.* 3, *fig.* 3.

1098. —— —— (abdomen).

Locality: Dobbertin, Mecklenburg. Horizon: Lower Jura.

1880. E. Geinitz. Zeitschr. deutsch. geol. gesellsch., 1880: 531. *Pl.* 22, *fig.* 22.

1099. —— ——.

Locality: Durdlestone Bay, England. Horizon: Lower Purbecks.

1854. Westwood. Quart. journ. geol. soc. Lond., x: 386, 395. *Pl.* 17, *fig.* 8.

1100. —— ——.

Locality: Durdlestone Bay, England. Horizon: Lower Purbecks.

1854. Westwood. Quart. journ. geol. soc. Lond., x: 386, 395. *Pl.* 17, *fig.* 8.

1101. —— ——.

Locality: Durdlestone Bay, England. Horizon: Lower Purbecks.

1854. Westwood. Quart. journ. geol. soc. Lond., x: 386, 395. *Pl.* 17, *fig.* 18.

1102. —— ——. (Cercopidæ?)

Locality: Durdlestone Bay, England. Horizon: Lower Purbecks.

1854. Westwood. Quart. journ. geol. soc. Lond., x: 388, 393. *Pl.* 14, *fig.* 6.

1103. ——— ———. (Cimicidæ.)

Locality: Vale of Wardour, England. Horizon: Purbecks.

1845. Brodie. Foss. ins. sec. rocks Engl., 33 (Westw., 120). *Pl.* 4, *fig.* 6.

1104. ——— ———. (Cimicidæ.)

Locality: Strensham, England. Horizon: Lower Lias.

1845. Brodie. Foss. ins. sec. rocks Engl., 101 (Westw., 123). *Pl.* 7, *fig.* 22.

1105. ——— ———. (Cimicidæ.)

Locality: England. Horizon: Lias.

1871. Phillips. Geology of Oxford, 123.

1106. ——— ———. (Cimicidæ.)

Locality: Durdlestone Bay, England. Horizon: Middle Purbecks.

1854. Westwood. Quart. journ. geol. soc. Lond., x: 384, 394. *Pl.* 15, *fig.* 25.

1107. ——— ———. (Cimicidæ.)

Locality: Durdlestone Bay, England. Horizon: Lower Purbecks.

1854. Westwood. Quart. journ. geol. soc. Lond., x: 387, 395. *Pl.* 17, *fig.* 14.

1108. ——— ———. (Cimicidæ.)

Locality: Durdlestone Bay, England. Horizon: Lower Purbecks.

1854. Westwood. Quart. journ. geol. soc. Lond., x: 390, 396. *Pl.* 18, *fig.* 4.

1109. ——— ———. (Cimicidæ.)

Locality: Durdlestone Bay, England. Horizon: Lower Purbecks.

1854. Westwood. Quart. journ. geol. soc. Lond., x: 389, 396 (or Coleoptera). *Pl.* 18, *fig.* 11.

1110. ——— ———. (Cimicidæ or Homoptera.)

Locality: Durdlestone Bay, England. Horizon: Lower Purbecks.

1854. Westwood. Quart. journ. geol. soc. Lond., x: 389, 396. *Pl.* 18, *fig.* 17.

1111. ——— ———. (Cimicidæ.)

Locality: Durdlestone Bay, England. Horizon: Lower Purbecks.

1854. Westwood. Quart. journ. geol. soc. Lond., x: 390, 396. *Pl.* 18, *fig.* 29.

1112. ——— ———. (Homoptera.)

Locality: Hasfield, England. Horizon: Lower Lias.

1845. Brodie. Foss. ins. sec. rocks Engl., 101 (Westw., 127). *Pl.* 7, *fig.* 15.

1113. ——— ———. (Homoptera.)

Locality: Hasfield, England. Horizon: Lower Lias.

1845. Brodie. Foss. ins. sec. rocks Engl., 101 (Westw., 127). *Pl.* 7, *fig.* 21.

1114. ——— ——— (larva). (Homoptera.)

Locality: Strensham, England. Horizon: Lower Lias.

1873. Brodie. Distr. corr. foss. ins., 16.

1115. ——— ———. (Homoptera.)

Locality: Binton, England. Horizon: Lower Lias.

1873. Brodie. Distr. corr. foss. ins., 16.

1116. ——— ———. (Homoptera.)

Locality: England. Horizon: Lias.

1871. Phillips. Geology of Oxford, 123.

1117. ——— ———. (Homoptera.)

Locality: Durdlestone Bay, England. Horizon: Lower Purbecks.

1854. Westwood. Quart. journ. geol. soc. Lond., x: 387, 395. *Pl.* 17, *fig.* 11.

1118. ——— ———. (Homoptera or Cimicidæ.)

Locality: Durdlestone Bay, England. Horizon: Lower Purbecks.

1854. Westwood. Quart. journ. geol. soc. Lond., x: 389, 396. *Pl.* 18, *fig.* 17.

1119. ——— ———. (Nepidæ?)

Locality: Durdlestone Bay, England. Horizon: Middle Purbecks.

1854. Westwood. Quart. journ. geol. soc. Lond., x: 384.

1120. ——— ———. (Nepidæ.)

Locality: Ridgway, England. Horizon: Lower Purbecks.

1854. Westwood. Quart. journ. geol. soc. Lond., x: 384, 396. *Pl.* 18, *fig.* 14.

1121. ——— ———. (Pentatomidæ.)

Locality: England. Horizon: Lias.

1874. Brodie. Distr. corr. foss. ins., 19.

1122. ——— ———. (Pentatomidæ?)

Locality: England. Horizon: Lias.

1854. Westwood. Quart. journ. geol. soc. Lond., x: 381, 396. *Pl.* 18, *fig.* 2.
(Head of larva of Odonata.—S. H. S.)

Actea sphinx. See II, COLEOPTERA, Idem.

1123. Aphis ———. (Aphidæ.)

Locality: England. Horizon: Wealden.

1845. Westwood. Brodie, Foss. ins. sec. rocks Engl., 120. *Pl.* 2, *fig.* 9.
See also Aphis dubia.

1124. Aphis dubia. (Aphidæ.)

Locality: England. Horizon: Wealden.

1856. Giebel. Insect. d. vorwelt, 389.
See also Aphis ——— Westwood.

1125. Aphis plana. (Aphidæ.)

Locality: Vale of Wardour, England. Horizon: Purbecks.

1845. Brodie. Foss. ins. sec. rocks Engl., 33, 120. *Pl.* 2, *fig.* 10.
1856. Giebel. Insect. d. vorwelt, 389.

1126. Aphis valdensis. (Aphidæ.)

Locality: Vale of Wardour, England. Horizon: Purbecks.

1845. Brodie. Foss. ins. sec. rocks Engl., 33, 120. *Pl.* 4, *fig.* 3.
1856. Giebel. Insect. d. vorwelt, 388–389.
1883. Buckton. Monogr. Brit. aphid., iv: 148. *Pl.* 132, *figs.* 4, 5.
1883. Scudder Zittel, Handb. palaeont., i, th. ii: 780. *Fig.* 987.
1886. " Zittel-Barrois, Traité de paléont., ii: 780. *Fig.* 1004.
1886. " Bull. U. S. geol. surv., No. 31: 59.

1127. Asira egertoni. (Fulgoridæ.)

Locality: Vale of Wardour, England. Horizon: Purbecks.

1856. Giebel. Insect. d. vorwelt, 377 (Brodie, iv: 7).
See also Asiraca egertoni, Asira kenngotti.

1128. Asira kenngotti. (Fulgoridæ.)

Locality: Vale of Wardour, England. Horizon: Purbecks.

1856. Giebel. Insect. d. vorwelt, 377 (Brodie, iv: 8).
See also Asiraca egertoni, Asira egertoni.

1129. Asiraca egertoni. (Fulgoridæ.)

Locality: Vale of Wardour, England. Horizon: Purbecks.

1845. Brodie. Foss. ins. sec. rocks Engl., 33, 120. *Pl.* 4, *figs.* 7, 8.
See also Asira kenngotti, A. egertoni.

1130. Belostoma ——. (Belostomatidæ.)

Locality: Wainlode, England. Horizon: Lower Lias.

1873. Brodie. Distr. corr. foss. ins., 16.

1131. Belostoma ——. (Belostomatidæ.).

Locality: England. Horizon: Lias.

1845. Westwood. Brodie, Foss. ins. sec. rocks Engl., 127. *Pl.* 10, *fig.* 13.
See also Belostoma liasina.

1132. Belostoma deperdita. (Belostomatidæ.)

Locality: Solenhofen, Bavaria. Horizon: Jura.

1877. Assmann. Ber. versamml. deutsch. naturf., i: 192 (Belostomum).
1886. Deichmüller. Ins. lith. schichten dresd. mus., 61–63. *Pl.* 5, *figs.* 1–3.
1888. Oppenheim. Palaeontogr., xxxiv: 233–234. *Pl.* 31, *fig.* 3.
See also Belostoma hartingi, Scarabæus deperditus, etc., Scarabæides deperditus, Hydrophilus deperditus.

Belostoma elongata. See II, HYMENOPTERA, Idem.

1133. Belostoma hartingi. (Belostomatidæ.)

Locality: Solenhofen, Bavaria. Horizon: Jura.

1869. Weyenbergh. Arch. mus. Teyl., ii: 268–270 (Belostomum). *Pl.* 35, *fig.* 20.
1869. " Ins. foss. calc. lithogr., 22–24. *Pl.* 2, *fig.* 20.
1869. " Tijdschr. v. ent., (2), iv: 233 [133].
1874. " Period. zool., i: 83, 100.
1874. " Énum. syst. faune ent. mésoz., 14.
See also Belostoma deperdita, etc.

1134. Belostoma liasina. (Belostomatidæ.)

Locality: England. Horizon: Lias.

1856. Giebel. Insect. d. vorwelt, 371 (Belostomum).
See also Belostoma —— Westwood.

Belostoma schroeteri. See II, HYMENOPTERA, Idem.

Belostomum deperditum. See Belostoma deperdita.

Belostomum hartingi. See Belostoma hartingi.

Belostomum liasinum. See Belostoma liasina.

1135. Cercopidium ——. (Cercopidæ.)

Locality: Dobbertin, Mecklenburg. Horizon: Jura.

1883. E. Geinitz. Flötzform. Mecklenb., 32 (name only).

1136. Cercopidium hahnii. (Cercopidæ.)

Locality: Durdlestone Bay, England. Horizon: Lower Purbecks.

1854. Westwood. Quart. journ. geol. soc. Lond., x: 390, 396. *Pl.* 18, *fig.* 3.
1856. Giebel. Insect. d. vorwelt, 388.

1137. Cercopidium heeri. (Cercopidæ.)

Locality: Dobbertin, Mecklenburg. Horizon: Lower Jura.

1880. E. Geinitz. Zeitschr. deutsch. geol. gesellsch., 1880: 529. *Pl.* 22, *fig.* 17.
1885. Scudder. Zittel, Handb. palaeont., i, th. ii: 781. *Fig.* 991.
1886. " Zittel-Barrois, Traité de paléont., ii: 781. *Fig.* 1008.
See also Cercopis heeri.

1138. Cercopidium mimas. (Cercopidæ.)

Locality: Durdlestone Bay, England. Horizon: Lower Purbecks.

1854. Westwood. Quart. journ. geol. soc. Lond., x: 390, 393–394. *Pl.* 15, *fig.* 3.
See also Cercopis mimas.

1139. Cercopidium minutum. (Cercopidæ.)

Locality: Schambelen, Switzerland. Horizon: Lias.

1865. Heer. Urwelt der Schweiz, 91. *Pl.* 8, *fig.* 29.
1872. " Monde prim. Suisse, 111. *Pl.* 8, *fig.* 29.
1876. " Prim. world Switz., i: 91. *Pl.* 8, *fig.* 29.
1879. " Urwelt der Schweiz, 2^e aufl., 101. *Pl.* 8, *fig.* 29.

1140. Cercopidium morio. (Cercopidæ.)

Locality: Schambelen, Switzerland. Horizon: Lias.

1865. Heer. Urwelt der Schweiz, 91. *Pl.* 8, *fig.* 30.
1872. " Monde prim. Suisse, 111. *Pl.* 8, *fig.* 30.
1876. " Prim. world Switz., i: 91. *Pl.* 8, *fig.* 30.
1879. " Urwelt der Schweiz, 2^e aufl., 101. *Pl.* 8, *fig.* 30.

1141. Cercopidium schaefferi. (Cercopidæ.)

Locality: Durdlestone Bay, England. Horizon: Lower Purbecks.

1854. Westwood. Quart. journ. geol. soc. Lond., x: 390, 396. *Pl.* 18, *fig.* 5.
See also Cercopis schaefferi.

1142. Cercopidium signoretii. (Cercopidæ.)

Locality: Durdlestone Bay, England. Horizon: Lower Purbecks.

1854. Westwood. Quart. journ. geol. soc. Lond., x: 390, 396. *Pl.* 18, *fig.* 36.
See also Cercopis signoretii.

1143. Cercopidium telesphorus. (Cercopidæ.)

Locality: Durdlestone Bay, England. Horizon: Middle Purbecks.

1854. Westwood. Quart. journ. geol. soc. Lond., x: 384, 394. *Pl.* 15, *fig.* 14**.
1886. Scudder. Mem. Bost. soc. nat. hist., iii: 451. *Pl.* 48, *figs.* 8e, 13.
1890. " Foss. ins. N. A., i: 343. *Pl.* 22, *figs.* 8e, 13.
See also Cercopis telesphorus.

1144. Cercopidium trigonale. (Cercopidæ.)

Locality: Durdlestone Bay, England. Horizon: Lower Purbecks.

1854. Westwood. Quart. journ. geol. soc. Lond., x: 396 (unnamed). *Pl.* 18, *fig.* 4.
1856. Giebel. Insect. d. vorwelt, 388.

1145. Cercopis ——. (Cercopidæ.)

Locality: Vale of Wardour, England. Horizon: Purbecks.

1845. Brodie. Foss. ins. sec. rocks Engl., 33. *Pl.* 2, *fig.* 12; *pl.* 4, *fig.* 9.
1856. Giebel. Insect. d. vorwelt, 382.

1146. Cercopis heeri. (Cercopidæ.)

Locality: Dobbertin, Mecklenburg. Horizon: Lower Jura.

1884. E. Geinitz. Zeitschr. deutsch. geol. gesellsch., 1884: 581.
See also Cercopidium heeri.

1147. Cercopis jurassica. (Cercopidæ.)

Locality: Dobbertin, Mecklenburg. Horizon: Lias.

1884. E. Geinitz. Zeitschr. deutsch. geol. gesellsch., 1884: 581–582. *Pl.* 13, *fig.* 25.

1148. Cercopis mimas. (Cercopidæ.)

Locality: England. Horizon: Lower Purbecks.

1856. Giebel. Insect. d. vorwelt, 379.
See also Cercopidium mimas.

1149. Cercopis prisca. (Cercopidæ.)

Locality: Solenhofen, Bavaria. Horizon: Jura.

1874. Weyenbergh. Periód. zool., i: 86. *Pl.* 8, *fig.* 10.
See also Cicada prisca.

1150. Cercopis schaefferi. (Cercopidæ.)

Locality: Durdlestone Bay, England. Horizon: Lower Purbecks.

1856. Giebel. Insect. d. vorwelt, 379.
See also Cercopidium schaefferi.

1151. Cercopis signoretii. (Cercopidæ.)

Locality: Durdlestone Bay, England. Horizon: Lower Purbecks.

1856. Giebel. Insect. d. vorwelt, 379–380.
See also Cercopidium signoretii.

1152. Cercopis telesphorus. (Cercopidæ.)

Locality: Durdlestone Bay, England. Horizon: Middle Purbecks.

1856. Giebel. Insect. d. vorwelt, 379.
See also Cercopidium telesphorus.

1153. Cercopyllis adolescens. (Cercopidæ.)

Locality: Fairplay, Colo. Horizon: Trias.

1890. Scudder. Mem. Bost. soc. nat. hist., iv: 472. *Pl.* 42, *fig.* 12.
1890. " Foss. ins. N. A., i: 448. *Pl.* 34, *fig.* 12.

1154. Cercopyllis delicatula. (Cercopidæ.)

Locality: Fairplay, Colo. Horizon: Trias.

1890. Scudder. Mem. Bost. soc. nat. hist., iv: 471. *Pl.* 42, *fig.* 11.
1890. “ Foss. ins. N. A., i: 447. *Pl.* 34, *fig.* 11.

1155. Cercopyllis justiciæ. (Cercopidæ.)

Locality: Fairplay, Colo. Horizon: Trias.

1890. Scudder. Mem. Bost. soc. nat. hist., iv: 471. *Pl.* 42, *fig.* 6.
1890. “ Foss. ins. N. A., i: 447. *Pl.* 34, *fig.* 6.

1156. Cicada —— (pupa). (Stridulantia.)

Locality: Strensham, England. Horizon: Lower Lias.

1873. Brodie. Distr. corr. foss. ins., 8, 16.

1157. Cicada ——.

Locality: Strensham, England. Horizon: Lower Lias.

1873. Brodie. Distr. corr. foss. ins., 16 (“like Meloe”!).

1158. Cicada ——.

Locality: England. Horizon: Lias.

1845. Westwood. Brodie, Foss. ins. sec. rocks Engl., 127. *Pl.* 10, *fig.* 7.

Cicada dubia. See II, ORTHOPTERA, Gryllites dubius.

1159. Cicada gigantea. (Stridulantia.)

Locality: Solenhofen, Bavaria. Horizon: Jura.

1874. Weyenbergh. Periód. zool., i: 85, 101. *Pl.* 3, *fig.* 4.
1874. “ Énum. syst. faune ent. mésoz., 15.
1886. Deichmüller. Ins. lith. schichten dresd. mus., 60.
See also Eocicada microcephala.

1160. Cicada murchisoni.

Locality: Hasfield, England. Horizon: Lower Lias.

1845. Brodie. Foss. ins. sec. rocks Engl., 101, 127. *Pl.* 7, *fig.* 20.
1856. Giebel. Insect. d. vorwelt, 373–374.
1871. Phillips. Geology of Oxford, 123.

1161. Cicada prisca. (Cercopidæ.)

Locality: Solenhofen, Bavaria. Horizon: Jura.

1874. Weyenbergh. Periód. zool., i: 101.
1874. “ Énum. syst. faune ent. mésoz., 15.
See also Cercopis prisca.

1162. Cicada proserpina. (Stridulantia.)

Locality: Solenhofen, Bavaria. Horizon: Jura.

1874. Weyenbergh. Periód. zool., i: 86, 100. *Pl.* 3, *fig.* 9.
1874. “ Énum. syst. faune ent. mésoz., 14.
1886. Deichmüller. Ins. lith. schichten dresd. mus., 60.

1163. Cicada psocus. (Cercopidæ.)

Locality: Durdlestone Bay, England. Horizon: Middle Purbecks.

1856. Giebel. Insect. d. vorwelt, 374.
See also Cicadellium psocus.

1164. Cicada punctata. (Cicadellina.)

Locality: Vale of Wardour, England. **Horizon**: Purbecks.

1845. Brodie. Foss. ins. sec. rocks Engl., 33, 120. *Pl.* 5, *fig.* 4.

1856. Giebel. Insect. d. vorwelt, 374.

1165. Cicadellium dipsas. (Cercopidæ.)

Locality: Durdlestone Bay, England. **Horizon**: Middle Purbecks.

1854. Westwood. Quart. journ. geol. soc. Lond., x: 383, 393–394. *Pl.* 15, *fig.* 6, upper left-hand fig.

1166. Cicadellium psocus. (Cercopidæ.)

Locality: Durdlestone Bay, England. **Horizon**: Middle Purbecks.

1854. Westwood. Quart. journ. geol. soc. Lond., x: 384, 394. *Pl.* 15, *fig.* 18.
See also Cicada psocus.

1167. Cicadinella ——. (Cercopidæ.)

Locality: Dobbertin, Mecklenburg. **Horizon**: Lias.

1884. E. Geinitz. Zeitschr. deutsch. geol. gesellsch., 1884: 582.

1168. Cimex ——. (Cimicidæ.)

Locality: Strensham, England. **Horizon**: Lower Lias.

1873. Brodie. Distr. corr. foss. ins., 16.

1169. Cimicidium dallasii. (Lygæidæ.)

Locality: Durdlestone Bay, England. **Horizon**: Lower Purbecks.

1854. Westwood. Quart. journ. geol. soc. Lond., x: 387, 395. *Pl.* 17, *fig.* 15.
See all Lygæites dallasii.

Cixia maculata. See Cixius maculatus.

1170. Cixius maculatus. (Fulgoridæ.)

Locality: Vale of Wardour, England. **Horizon**: Purbecks.

1845. Brodie. Foss. ins. sec. rocks Engl., 33, 120. *Pl.* 2, *fig.* 8.

1856. Giebel. Insect. d. vorwelt, 377 (Cixia).

1171. Corixa ? ——. (Notonectidæ.)

Locality: Eichstadt, Bavaria. **Horizon**: Jura.

1888. Oppenheim. Palaeontogr., xxxiv: 235. *Pl.* 30, *fig.* 15.

1172. Corixa mortua. (Notonectidæ.)

Locality: Solenhofen, Bavaria. **Horizon**: Jura.

1869. Weyenbergh. Arch. mus. Teyl., ii: 268. *Pl.* 35, *figs.* 18, 18*a*.

1869. “ Ins. foss. calc. lithogr., 22. *Pl.* 2, *figs.* 18, 18*a*.

1869. “ Tijdschr. v. ent., (2), iv: 233 [133].

1874. “ Periód. zool., i: 99.

1874. “ Énum. syst. faune ent. mésoz., 13.

1173. Cyclocoris pinguis. (Coreidæ.)

Locality: Schambelen, Switzerland. **Horizon**: Lias.

1865. Heer. Urwelt der Schweiz, 91. *Pl.* 8, *fig.* 27.

1872. “ Monde prim. Suisse, 111. *Pl.* 8, *fig.* 27.

1876. “ Prim. world Switz., i: 91. *Pl.* 8, *fig.* 27.

1879. “ Urwelt der Schweiz, 2e aufl., 101. *Pl.* 8, *fig.* 27.

1174. Delphax pulcher. (Fulgoridæ.)

Locality: Vale of Wardour, England. Horizon: Purbecks.

1845. **Brodie.** Foss. ins. sec. rocks Engl., 33, 120. *Pl.* 5, *fig.* 17.
1856. **Giebel.** Insect. d. vorwelt, 378.

Ditomoptera dubia. See II, COLEOPTERA, Idem.

1175. Eocicada microcephala. (Stridulantia.)

Locality: Eichstadt, Bavaria. Horizon: Jura.

1888. Oppenheim. Palaeontogr., xxxiv: 229. *Pl.* 31, *fig.* 30.
See also Cicada gigantea.

Flata haidingeri. See II, NEUROPTERA, Idem.

Hagenia schroeteri. See II, HYMENOPTERA, Idem.

Halometra gigantea. See II, ORTHOPTERA, Idem.

Halometra minor. See II, ORTHOPTERA, Idem.

1176. Hydrometra ———. (Hydrometridæ.)

Locality: Vale of Wardour, England. Horizon: Purbecks.

1845. Brodie. Foss. ins. sec. rocks Engl., 33 (Westwood, 121).

1177. Hydrophilus deperditus. (Belostomatidæ.)

Locality: Solenhofen, Bavaria. Horizon: Jura.

1874. Weyenbergh. Periód. zool., i: 83–84.
See also Belostoma deperdita, etc.

1178. Ischyopteron suprajurense. (Geocorisa.)

Locality: Eichstadt, Bavaria. Horizon: Jura.

1888. Oppenheim. Palaeontogr., xxxiv: 230. *Pl.* 30, *fig.* 7.

1179. Kleidocerys or Pachymerus ———.

Locality: Vale of Wardour, England. Horizon: Purbecks.

1845. Brodie. Foss. ins. sec. rocks Engl., 33, 120. *Pl.* 2, *fig.* 11.

1180. Lygæites dallasii. (Lygæidæ.)

Locality: Durdlestone Bay, England. Horizon: Lower Purbecks.

1856. Giebel. Insect. d. vorwelt, 360.
See also Cimicidium dallasii.

1181. Lygæites furcatus. (Lygæidæ.)

Locality: Durdlestone Bay, England. Horizon: Lower Purbecks.

1854. Westwood. Quart. journ. geol. soc. Lond., x: 395 (unnamed). *Pl.* 17, *fig.* 14.
1856. Giebel. Insect. d. vorwelt, 360.

1182. Lygæites priscus. (Lygæidæ.)

Locality: Durdlestone Bay, England. Horizon: Lower Purbecks.

1854. Westwood. Quart. journ. geol. soc. Lond., x: 396 (unnamed). *Pl.* 18, *fig.* 11.
1856. Giebel. Insect. d. vorwelt, 360.

1183. Lystra vollenhovenii. (Fulgoridæ.)

Locality: Solenhofen, Bavaria. Horizon: Jura.

1869.	Weyenbergh.	Arch. mus. Teyl., ii: 271–272. *Pl.* 36, *fig.* 24.
1869.	"	Ins. foss. calc. lithogr., 25–26. *Pl.* 3, *fig.* 24.
1869.	"	Tijdschr. v. ent., (2), iv: 234 [134].
1874.	"	Periód. zool., i: 100.
1874.	"	Énum. syst. faune ent. mésoz., 14.

1184. Molobius ———.

Locality: England. Horizon: Lower Purbecks.

1873.	Brodie.	Distr. corr. foss. ins., 14. (I do not find any hemipterous genus of this name.)

1185. Naucoris carinata. (Naucoridæ.)

Locality: Eichstadt, Bavaria. Horizon: Jura.

1888.	Oppenheim.	Palaeontogr., xxxiv: 235. *Pl.* 30, *fig.* 14.

1186. Naucoris lapidarius. (Naucoridæ.)

Locality: Solenhofen, Bavaria. Horizon: Jura.

1869.	Weyenbergh.	Arch. mus. Teyl., ii: 267–268. *Pl.* 35, *figs.* 19, 19*a*.
1869.	"	Ins. foss. calc. lithogr., 21–22. *Pl.* 2, *figs.* 19, 19*a*.
1869.	"	Tijdschr. v. ent., (2), iv: 233 [133].
1874.	"	Periód. zool., i: 99.
1874.	"	Énum. syst. faune ent. mésoz., 13.
1885.	Scudder.	Zittel, Handb. palaeont., i, ii: 782.
1886.	"	Zittel-Barrois, Traité de paléont., ii: 782.
1886.	Deichmüller.	Ins. lith. schichten dresd. mus., 63–64. *Pl.* 5, *fig.* 6.
1888.	Oppenheim.	Palaeontogr., xxxiv: 234. *Pl.* 30, *fig.* 16.

1187. Nepa primordialis. (Nepidæ.)

Locality: Solenhofen, Bavaria. Horizon: Jura.

1839.	Münster.	MSS.
1839.	Germar.	Verhandl. leop.-carol. akad. naturf., xix: 206–207. *Pl.* 22, *fig.* 7.
1852.	Giebel.	Deutschl. petref., 636.
1856.	"	Insect. d. vorwelt., 370.
1862.	Hagen.	Palaeontogr., x: 111.
1863.	Winkler.	Cat. syst. coll. pal. mus. Teyl., 422.
1869.	Weyenbergh.	Arch. mus. Teyl., ii: 273. *Pl.* 35, *figs.* 22, 22*a*.
1869.	"	Ins. foss. calc. lithogr., 27. *Pl.* 2, *figs.* 22, 22*a*.
1869.	"	Tijdschr. v. ent., (2), iv: 233 [133].
1874.	"	Periód. zool., i: 99.
1874.	"	Énum. syst. faune ent. mésoz., 13.
1877.	Assmann.	Ber. versamml. deutsch. naturf., l: 192.
1885.	Scudder.	Zittel, Handb. palaeont., i, ii: 782.
1886.	"	Zittel-Barrois, Traité de paléont., ii: 782.
1886.	Deichmüller.	Ins. lith. schichten dresd. mus., 60–61. *Pl.* 5, *figs.* 4–5.
1888.	Oppenheim.	Palaeontogr., xxxiv: 234. *Pl.* 31, *fig.* 11.

1188. Nepidium stolones. (Nepidæ.)

Locality: Ridgway, England. Horizon: Lower Purbecks.

1854.	Westwood.	Quart. journ. geol. soc. Lond., x: 384, 396. *Pl.* 18, *fig.* 9.

1189. Neurocoris ——. (Pentatomidæ.)

Locality: Durdlestone Bay, England. **Horizon:** Lower Purbecks.

1854.	Westwood.	Quart. journ. geol. soc. Lond., x: 395 (unnamed). *Pl.* 17, *fig.* 11.
1856.	Giebel.	Insect. d. vorwelt, 339.

1190. Notonecta elterleini. (Notonectidæ.)

Locality: Eichstadt, Bavaria. **Horizon:** Jura.

1886.	Deichmüller.	Ins. lith. schichten dresd. mus., 64. *Pl.* 5, *fig.* 7.

Pachymeria ——. See Pachymerus ——.

1191. Pachymeridium dubium. (Lygæidæ.)

Locality: Dobbertin, Mecklenburg. **Horizon:** Lower Jura.

1880.	E. Geinitz.	Zeitschr. deutsch. geol. gesellsch., 1880: 529–530. *Pl.* 22, *fig.* 18.
1884.	"	Zeitschr. deutsch. geol. gesellsch., 1884: 582.

1192. Pachymerus (or Kleidocerys) ——. (Lygæidæ.)

Locality: Vale of Wardour, England. **Horizon:** Purbecks.

1845.	Brodie.	Foss. ins. sec. rocks Engl., 33, 120 (Pachymeria). *Pl.* 2, *fig.* 11.

1193. Pachymerus zucholdi. (Lygæidæ.)

Locality: Strensham, England. **Horizon:** Lower Lias.

1845.	Brodie.	Foss. ins. sec. rocks Engl., 101 (unnamed). *Pl.* 7, *fig.* 22.
1856.	Giebel.	Insect. d. vorwelt, 356.

1194. Palæontina oolitica. (Stridulantia.)

Locality: Stonesfield, England. **Horizon:** Stonesfield Slate.

1873.	Butler.	Lepid. exot., xv: 126–127. *Pl.* 48, *figs.* 1–2
1873.	"	Geol. mag., x: 2, 3. *Pl.* 1, *figs.* 1, 2.
1873.	Brodie.	Distr. corr. foss. ins., 8 (unnamed).
1874.	"	Distr. corr. foss. ins., 8–9 (unnamed).
1874.	Butler.	Geol. mag., (2), i: 446–449. *Pl.* 19.
1874.	Scudder.	Proc. Bost. soc. nat. hist., xvi: 112 (unnamed).
1875.	"	Foss. butt., 89–95. *Figs.* 4–8.
1877.	Kirby.	Syn. cat. diurn. Lep., suppl., 717.
1879.	Goss.	Proc. geol. assoc., vi: 127.
1879.	"	Ins. fauna mésoz. per., ii: 14.
1885.	Scudder.	Zittel, Handb. palaeont., i. th. ii: 782. *Fig.* 993.
1886.	"	Zittel-Barrois, Traité de paléont., ii: 782. *Fig.* 1010.
1886.	"	Bull. U. S. geol. surv., No. 31: 61.
1886.	Deichmüller.	Ins. lith. schichten dresd. mus., 60.
1889.	Brauer-Redtenb.-Ganglb.	Mém. acad. sc. St.-Pétersb., (7), xxxvi, No. 15: 14–15. *Pl.* [2], *fig.* 18*a*.

1195. Prolystra lithographica. (Fulgoridæ.)

Locality: Eichstadt, Bavaria. **Horizon:** Jura.

1888.	Oppenheim.	Palaeontogr., xxxiv: 228. *Pl.* 31, *fig.* 1.

1196. Phragmatœcites damesii. (Stridulantia.)

Locality: East Siberia. **Horizon:** Brown Jura.

1885.	Oppenheim.	Berl. entom. zeitschr., xxix: 333. *Pl.* 10, *figs.* 2, 3.
1886.	Scudder.	Zittel-Barrois, Traité de paléont., ii: 814, note.
1886.	"	Bull. U. S. geol. surv., No. 31: 96.
1889.	Brauer-Redtenb.-Gangl.	Mém. acad. sc. St.-Pétersb., (7), xxxvi: No. 15, 15–16. *Pl.* [2], *fig.* 19.

Propygolampis bronni. See II, ORTHOPT., Idem.

1197. Protocoris insignis. (Coreidæ.)

Locality: Schambelen, Switzerland. **Horizon:** Lias.

1865.	Heer.	Urwelt der Schweiz, 91. *Pl.* 8, *fig.* 28.
1872.	“	Monde prim. Suisse, 111. *Pl.* 8, *fig.* 28.
1876.	“	Prim. world Switz., i: 91. *Pl.* 8, *fig.* 28.
1879.	“	Urwelt der Schweiz, 2^{e} aufl., 101. *Pl.* 8, *fig.* 28.
1885.	Scudder.	Zittel, Handb. palaeont., i, th. ii: 785. *Fig.* 1001.
1886.	“	Zittel-Barrois, Traité de paléont., ii: 785. *Fig.* 1018.

1198. Protocoris ovalis. (Coreidæ.)

Locality: Schambelen, Switzerland. **Horizon:** Lias.

1865.	Heer.	Urwelt der Schweiz, 91.
1872.	“	Monde prim. Suisse, 111.
1876.	“	Prim. world Switz., i: 91.
1879.	“	Urwelt der Schweiz, 2^{e} aufl., 101.

1199. Protocoris planus. (Coreidæ.)

Locality: Aargau, Switzerland. **Horizon:** Lias.

1852.	Heer.	Lias-insel Aargau, 15. *Pl.*, *figs.* 44–45.
1856.	Giebel.	Insect. d. vorwelt, 498.

Pygolampis gigantea. See II, ORTHOPT., Idem.

1200. Ricania fulgens. (Fulgoridæ.)

Locality: Vale of Wardour, England. **Horizon:** Purbecks.

1845.	Brodie.	Foss. ins. sec. rocks Engl., 33, 120. *Pl.* 4, *fig.* 12.
1856.	Giebel.	Insect. d. vorwelt, 376.

Ricania gigas. See II, ORTHOPT., Idem.

Ricania hospes. See II, ORTHOPT., Idem.

1201. Scarabæides deperditus. (Belostomatidæ.)

Locality: Solenhofen, Bavaria. **Horizon:** Jura.

1839.	Germar.	Verhandl. leop.-carol. akad. naturf., xix: 218–220. *Pl.* 23, *fig.* 17.
1852.	Quenstedt.	Handb. petref., 313. *Pl.* 24, *fig.* 5.
1856.	Giebel.	Insect. d. vorwelt, 36.
1862.	Hagen.	Palaeontogr., x: 110 (not a beetle, resembles Belostoma).
1869.	Weyenbergh.	Tijdschr. v. ent., (2), iv: 233 [133], (Scarabæoides).
1885.	Scudder.	Zittel, Handb. palaeont., i, th. ii: 782, 802. *Fig.* 994.
1886.	“	Zittel-Barrois, Traité de paléont., ii: 782. *Fig.* 1011.
1886.	“	Bull. U. S. geol. surv., No. 31: 61, 73, 82.

See also Belostoma deperdita, etc.

Scarabæoides deperditus. See Scarabæides deperditus.

1202. Scarabæus deperditus. (Belostomatidæ.)

Locality: Solenhofen, Bavaria. **Horizon:** Jura.

1873.	Weyenbergh.	Arch. mus. Teyl., iii: 239–240.
1873.	“	Notes ins. calc. jurass., 6–7.
1874.	“	Periód. zool., i: 103.
1874.	“	Énum. syst. faune ent. mésoz., 17.

See also Belostoma deperdita, etc.

1203. Sphærodema jurassicum.

Locality: Eichstadt, Bavaria. Horizon: Jura.

1888. Oppenheim. Palaeontogr., xxxiv: 235. *Pl.* 31, *fig.* 10.

1204. Tettigonia ———. (Jassides.)

Locality: Belvaux, Luxembourg. Horizon: Bathonian.

1875. Borre. Comptes rend. soc. ent. Belg., (2), xviii: 17 (belongs to Diptera).
1880. " Mourlon, Geol. Belg., i: 144.

1205. Tettigonia ———. (Jassides.)

Locality: Wainlode, England. Horizon: Lower Lias.

1873. Brodie. Distr. corr. foss. ins., 16.

1206. Velia ———. (Veliidæ.)

Locality: Vale of Wardour, England. Horizon: Purbecks.

1845. Brodie. Foss. ins. sec. rocks Engl., 33 (Westw., 121).

1207. Velia cornuta. (Veliidæ.)

Locality: Solenhofen, Bavaria. Horizon: Jura.

1874. Weyenbergh. Periód. zool., i: 86, 98. *Pl.* 3, *fig.* 11.
1874. " Énum. syst. faune ent. mésoz., 12.

COLEOPTERA.

1208. ——— ——— (several).

Localities: Bexhill, Gover's Cliff End, East Cliff, England. Horizon: Wealden.

1854. Binfield. Quart. journ. geol. soc. Lond., x: 172, 173, 174, 175.

1209. ——— ———.

Compared with Necrodes littoralis.

Locality: Ust Balei, Siberia. Horizon: Lias.

1889. {Brauer-Redtenb-Ganglb.} Mém. acad. sc. St.-Pétersb., (7), xxxvi, No. 15: 20.

1210. ——— ——— (pupa).

Locality: Vale of Wardour, England. Horizon: Purbecks.

1845. Brodie. Foss. ins. sec. rocks Engl., 32 (Westwood, 116). *Pl.* 3, *fig.* 6.

1211. ——— ——— (3 sp.).

Locality: Farleigh, near Bath, England. Horizon: Forest Marble.

1845. Brodie. Foss. ins. sec. rocks Engl., 37.
1873. " Distr. corr. foss. ins., 13.

1212. ——— ———.

Locality: Swindon, England. Horizon: Purbecks?

1846. Brodie. Quart. journ. geol. soc. Lond., iii: 53.

1213. ——— ———.

Locality: Ringstead Bay, England. Horizon: Kimmeridge Clay.

1853. Brodie. Quart. journ. geol. soc. Lond., ix: 52.
1873. " Distr. corr. foss. ins., 13.

1214. ——— ———.

Locality: Hastings Sands, Isle of Wight, England. Horizon: Neocomian.

1853. Brodie. Quart. journ. geol. soc. Lond., ix: 52, note.

1215. ——— ———.

Locality: Hastings, England. Horizon: Wealden (base).

1873. Brodie. Distr. corr. foss. ins., 12.

1216. ——— ———.

Locality: Isle of Wight, England. Horizon: Wealden.

1873. Brodie. Distr. corr. foss. ins., 12.

1217. ——— ———.

Locality: Eastern Moorlands, Yorkshire, England. Horizon: Great Oolite.

1873. Brodie. Distr. corr. foss. ins., 13.

1218. ——— ———.

Localities: Dumbleton, Alderton, England. Horizon: Upper Lias.

1873. Brodie Distr. corr. foss. ins., 15.

1219. ——— ———.

Locality: The Leigh, England. Horizon: Lima Shales.

1873. Brodie. Distr. corr. foss. ins., 16.

1220. ——— ——— (aquatic).

Locality: Wainlode, England. Horizon: Lower Lias.

1873. Brodie. Distr. corr. foss. ins., 16.

1221. ——— ———.

Locality: Westbury, England. Horizon: Lower Lias.

1873. Brodie. Distr. corr. foss. ins., 16.

1222. ——— ———.

Locality: Hotham, Yorkshire, England. Horizon: Lower Lias.

1874. Brodie. Distr. corr. foss. ins., 20.

1223. ——— ——— (under surface anal segment).

Locality: Hotham, England. Horizon: Lower Lias.

1874. Brodie. Distr. corr. foss. ins., 20.

1224. ——— ——— (under wings).

Locality: England. Horizon: Lias.

1874. Brodie. Distr. corr. foss. ins., 20.

1225. ——— ———.

Locality: Copt Heath, near Knowle, England. Horizon: Lower Lias.

1875. Brodie. Lower Lias Eatington, etc., 10.

1226. ——— ———.

Localities: Brown's Wood and Stooper's Wood, near Henley, Arden, England. Horizon: Lias.

1875. **Brodie.** Lower Lias Eatington, etc., 10.

1227. ——— ——— (borings).

Locality: Roschutz, Germany. Horizon: Quadersandstein.

1839. Geinitz. Charakt. sächs. kreidegeb., 13–14. *Pl.* 6, *figs.* 2–3.

1228. ——— ———.

Locality: Ilminster, England. Horizon: Upper Lias.

1878. Goss. Proc. geol. assoc., vi: 130.
1878. " Ins. fauna mesoz. per., ii: 17.

1229. ——— ——— (2 or 3 sp.).

Locality: Stonesfield, England. Horizon: Oolite.

1822. Conyb.-Phill. Geol. Engl. Wales, 208.

1230. ——— ———.

Locality: Bohemia. Horizon: Cretaceous.

1869. Frič. Arch. naturw. landesdurchf. Böhmens, i, ii: 188. *Pl.* 3, *fig.* 7.
See also Silphites priscus.

1231. ——— ———.

Locality: Dobbertin, Mecklenburg. Horizon: Lower Jura.

1880. Geinitz. Zeitschr. deutsch. geol. gesellsch., 1880: 530. *Pl.* 22, *fig.* 21.

1232. ——— ———.

Locality: Kotá, India. Horizon: Lias?

1861. Hislop. Quart. journ. geol. soc. Lond., xvii, i: 354.

1233. ——— ———.

Locality: Wateringbury, England. Horizon: Wealden.

1846. Mantell. Quart. journ. geol. soc. Lond., ii: 96.

1234. ——— ———.

Locality: Near Stone, Buckinghamshire, England. Horizon: Wealden (?)

1847. Mantell. Geol. exc. Isle of Wight, 400.

1235. ——— ———.

Locality: Kent, England. Horizon: Wealden (?).

1847. Mantell. Geol. exc. Isle of Wight, 400.

1236. ——— ———.

Locality: England. Horizon: Purbecks.

1854. Mantell. Medals of creation, 2d ed., ii: 556. *Fig.* 182*c*.

1237. ——— ———.

Locality: England. Horizon: Purbecks.

1854. Mantell. Medals of creation, 2d ed., ii: 556. *Fig.* 182*d*.

1238. ——— ———.

Locality: England. Horizon: Purbecks.

1854. Mantell. Medals of creation, 2d ed., ii: 556. *Fig.* 182*e*.

1239. ——— ———.

Locality: England. Horizon: Upper Lias.

1845. Murchison. Geol. Cheltenham, 81, 108. *Pl.* 8, *fig.* 4.

1240. ——— ——— (several).

Locality: England. Horizon: Lower Lias.

1845. Murchison. Geol. Cheltenham, 81, 108. *Pl.* 9, *figs.* 2, 3, 4*b*, 5.

1241. ——— ——— (larva).

Locality: Kehlheim, Bavaria. Horizon: Jura.

1852. Quenstedt. Handb. petref., 318 (Raupe ? oder käfer-larve). *Pl.* 24, *fig.* 17.

1242. ——— ———.

Locality: Krälah bei Hildesheim, Germany. Horizon: Rhætic.

1876. Roemer. Zeitschr. deutsch. geol. gesellsch., xxviii: 352. *Fig.* 3.

1243. ——— ———.

Locality: Stonesfield, England. Horizon: ?

1830. Taylor. Loud., mag. nat hist., iii: 361.

1244. ——— ———.

Locality: Durdlestone Bay, England. Horizon: Lower Purbecks.

1854. Westwood. Quart. journ. geol. soc. Lond., x: 387–388, 393. *Pl.* 14, *fig.* 4.

1245. ——— ———.

Locality: Durdlestone Bay, England. Horizon: Lower Purbecks.

1854. Westwood. Quart. journ. geol. soc. Lond., x: 393. *Pl.* 14, *fig.* 9.

1246. ——— ———.

Locality: Durdlestone Bay, England. Horizon: Lower Purbecks.

1854. Westwood. Quart. journ. geol. soc. Lond., x: 393. *Pl.* 14, *fig.* 10.

1247. ——— ———.

Locality: Durdlestone Bay, England. Horizon: Lower Purbecks.

1854. Westwood. Quart. journ. geol. soc. Lond., x: 386, 393. *Pl.* 14, *fig.* 14.

1248. ——— ———.

Locality: Durdlestone Bay, England. Horizon: Lower Purbecks.

1854. Westwood. Quart. journ. geol. soc. Lond., x: 386, 393. *Pl.* 14, *fig.* 15.

1249. ——— ———.

Locality: Durdlestone Bay, England. Horizon: Lower Purbecks.

1854. Westwood. Quart. journ. geol. soc. Lond., x: 386, 393. *Pl.* 14, *fig.* 16.

1250. ——— ———.

Locality: Durdlestone Bay, England. Horizon: Lower Purbecks.

1854. Westwood. Quart. journ. geol. soc. Lond., x: 386, 393. *Pl.* 14, *fig.* 17.

1251. ——— ———.

Locality: Durdlestone Bay, England. Horizon: Lower Purbecks.

1854. Westwood. Quart. journ. geol. soc. Lond., x: 386, 393. *Pl.* 14, *fig.* 18.

1252. ——— ———.

Locality: Durdlestone Bay, England. Horizon: Middle Purbecks.

1854. Westwood. Quart. journ. geol. soc. Lond., x: 383, 394. *Pl.* 15, *fig.* 10.

1253. ——— ———.

Locality: Durdlestone Bay, England. Horizon: Middle Purbecks.

1854. Westwood. Quart. journ. geol. soc. Lond., x: 383, 394. *Pl.* 15, *fig.* 11.

1254. ——— ———.

Locality: Durdlestone Bay, England. Horizon: Middle Purbecks.

1854. Westwood. Quart. journ. geol. soc. Lond., x: 383, 394. *Pl.* 15, *fig.* 12.

1255. ——— ———.

Locality: Durdlestone Bay, England. Horizon: Middle Purbecks.

1854. Westwood. Quart. journ. geol. soc. Lond., x: 383, 394. *Pl.* 15, *fig.* 13, upper left fig.

1256. ——— ———.

Locality: Durdlestone Bay, England. Horizon: Middle Purbecks.

1854. Westwood. Quart. journ. geol. soc. Lond., x: 383, 394. *Pl.* 15, *fig.* 13, upper right fig.

1257. ——— ———.

Locality: Durdlestone Bay, England. Horizon: Middle Purbecks.

1854. Westwood. Quart. journ. geol. soc. Lond., x: 383, 394. *Pl.* 15, *fig.* 13, lower right fig.

1258. ——— ———.

Locality: Durdlestone Bay, England. Horizon: Lower Purbecks.

1854. Westwood. Quart. journ. geol. soc. Lond., x: 389, 394. *Pl.* 16, *fig.* 2.

1259. ——— ——— (many sp.).

Locality: Ridgway, England. Horizon: Lower Purbecks.

1854. Westwood. Quart. journ. geol. soc. Lond., x: 384–385, 394. *Pl.* 16, *fig.* 3.

1260. ——— ———.

Locality: Durdlestone Bay, England. Horizon: Middle Purbecks.

1854. Westwood. Quart. journ. geol. soc. Lond., x: 394. *Pl.* 16, *fig.* 7.

1261. ——— ———.

Locality: Durdlestone Bay, England. Horizon: Lower Purbecks.

1854. Westwood. Quart. journ. geol. soc. Lond., x: 390, 395. *Pl.* 16, *fig.* 12.

1262. ——— ———.

Locality: Durdlestone Bay, England. Horizon: Lower Purbecks.

1854. Westwood. Quart. journ. geol. soc. Lond., x: 395. *Pl.* 16, *fig.* 14.

1263. ——— ———.

Locality: Durdlestone Bay, England. Horizon: Lower Purbecks.
1854. Westwood. Quart. journ. geol. soc. Lond., x: 389, 395. *Pl.* 16, *fig.* 15.

1264. ——— ———.

Locality: Durdlestone Bay, England. Horizon: Lower Purbecks.
1854. Westwood. Quart. journ. geol. soc. Lond., x: 395. *Pl.* 16, *fig.* 16.

1265. ——— ———.

Locality: Durdlestone Bay, England. Horizon: Lower Purbecks.
1854. Westwood. Quart. journ. geol. soc. Lond., x: 390, 395. *Pl.* 16, *fig.* 17.

1266. ——— ———.

Locality: Durdlestone Bay, England. Horizon: Lower Purbecks.
1854. Westwood. Quart. journ. geol. soc. Lond., x: 395. *Pl.* 16, *fig.* 18.

1267. ——— ———.

Locality: Durdlestone Bay, England. Horizon: Lower Purbecks.
1854. Westwood. Quart. journ. geol. soc. Lond., x: 390, 395. *Pl.* 16, *fig.* 19.

1268. ——— ———.

Locality: Durdlestone Bay, England. Horizon: Lower Purbecks.
1854. Westwood. Quart. journ. geol. soc. Lond., x: 395. *Pl.* 16, *fig.* 20.

1269. ——— ———.

Locality: Durdlestone Bay, England. Horizon: Lower Purbecks.
1854. Westwood. Quart. journ. geol. soc. Lond., x: 395. *Pl.* 16, *fig.* 21.

1270. ——— ———.

Locality: Durdlestone Bay, England. Horizon: Lower Purbecks.
1854. Westwood. Quart. journ. geol. soc. Lond., x: 389, 395. *Pl.* 16, *fig.* 24.

1271. ——— ———.

Locality: Durdlestone Bay, England. Horizon: Lower Purbecks.
1854. Westwood. Quart. journ. geol. soc. Lond., x: 395. *Pl.* 16, *fig.* 25.

1272. ——— ———.

Locality: Durdlestone Bay, England. Horizon: Lower Purbecks.
1854. Westwood. Quart. journ. geol. soc. Lond., x: 395. *Pl.* 16, *fig.* 26.

1273. ——— ———.

Locality: Durdlestone Bay, England. Horizon: Lower Purbecks.
1854. Westwood. Quart. journ. geol. soc. Lond., x: 395. *Pl.* 16, *fig.* 27.

1274. ——— ———.

Locality: Durdlestone Bay, England. Horizon: Lower Purbecks.
1854. Westwood. Quart. journ. geol. soc. Lond., x: 395. *Pl.* 16, *fig.* 28.

1275. ——— ———.

Locality: Durdlestone Bay, England. Horizon: Lower Purbecks.
1854. Westwood. Quart. journ. geol. soc. Lond., x: 386, 395. *Pl.* 17, *fig.* 1.

1276. ——— ———.

Locality: Durdlestone Bay, England. Horizon: Lower Purbecks.
1854. Westwood. Quart. journ. geol. soc. Lond., x: 386, 395. *Pl.* 17, *fig.* 2.

1277. ——— ———.

Locality: Durdlestone Bay, England. Horizon: Lower Purbecks.
1854. Westwood. Quart. journ. geol. soc. Lond., x: 386, 395. *Pl.* 17, *fig.* 6.

1278. ——— ———.

Locality: Durdlestone Bay, England. Horizon: Lower Purbecks.
1854. Westwood. Quart. journ. geol. soc. Lond., x: 386-387, 395. *Pl.* 17, *fig.* 9.

1279. ——— ———.

Locality: Durdlestone Bay, England. Horizon: Lower Purbecks.
1854. Westwood. Quart. journ. geol. soc. Lond., x: 389, 396. *Pl.* 18, *fig.* 6.

1280. ——— ———.

Locality: Durdlestone Bay, England. Horizon: Lower Purbecks.
1854. Westwood. Quart. journ. geol. soc. Lond., x: 389, 396. *Pl.* 18, *fig.* 11.
(Or Hemiptera, Cimicidæ.)

1281. ——— ———.

Locality: Durdlestone Bay, England. Horizon: Lower Purbecks.
1854. Westwood. Quart. journ. geol. soc. Lond., x: 389, 396. *Pl.* 18, *fig.* 10.

1282. ——— ———.

Locality: Durdlestone Bay, England. Horizon: Lower Purbecks.
1854. Westwood. Quart. journ. geol. soc. Lond., x: 389, 396. *Pl.* 18, *fig.* 16.

1283. ——— ———.

Locality: Durdlestone Bay, England. Horizon: Lower Purbecks.
1854. Westwood. Quart. journ. geol. soc. Lond., x: 389, 396. *Pl.* 18, *fig.* 18.

1284. ——— ———.

Locality: Durdlestone Bay, England. Horizon: Lower Purbecks.
1854. Westwood. Quart. journ. geol. soc. Lond., x: 389, 396. *Pl.* 18, *fig.* 19.

1285. ——— ——— (2 sp. ?).

Locality: Swanage Bay, England. Horizon: Hastings Sands, Wealden.
1854. Westwood. Quart. journ. geol. soc. Lond., x: 382.

1286. ——— ———.

Locality: Ridgway, England. Horizon: Lower Purbecks.
1854. Westwood. Quart. journ. geol. soc. Lond., x: 385 (3½ lines long).

1287. ——— ———. (Blapsidæ.)

Locality: Sevenhampton, England. Horizon: Stonesfield Slate.
1845. Brodie. Foss. ins. sec. rocks Engl., 48. *Pl.* 6, *fig.* 16.

1288. ——— ———. (Buprestidæ.)

Locality: Vale of Wardour, England. Horizon: Purbecks.
1845. Brodie. Foss. ins. sec. rocks Engl., 32 (Westw., 116). *Pl.* 6, *fig.* 1.

1289. ——— ———. (Buprestidæ.)

Locality: Vale of Wardour, England. Horizon: Purbecks.

1845. Brodie. Foss. ins. sec. rocks Engl., 32 (Westw., 117). *Pl.* 6, *fig.* 10.

1290. ——— ———. (Buprestidæ.)

Localities: Sevenhampton and Eyeford, England. Horizon: Stonesfield Slate.

1845. Brodie. Foss. ins. sec. rocks Engl., 48. *Pl.* 6, *fig.* 17.

1291. ——— ———. (Buprestidæ.)

Localities: Sevenhampton and Eyeford, England. Horizon: Stonesfield Slate.

1845. Brodie. Foss. ins. sec. rocks Engl., 48. *Pl.* 6, *fig.* 18.

1292. ——— ———. (Buprestidæ.)

Localities: Sevenhampton and Eyeford, England. Horizon: Stonesfield Slate.

1845. Brodie. Foss. ins. sec. rocks Engl., 48. *Pl.* 6, *fig.* 19.

1293. ——— ———. (Buprestidæ or Elateridæ.)

Localities: Wainlode, Apperley, Brockeridge, Churchdown, Aust, England.
Horizon: Lower Lias.

1845. Brodie. Foss. ins. sec. rocks Engl., 101 (Westw., 124). *Pl.* 6, *fig.* 23.

1294. ——— ———. (Buprestidæ or Elateridæ.)

Localities: Wainlode, Apperley, Brockeridge, Churchdown, Aust, England.
Horizon: Lower Lias.

1845. Brodie. Foss. ins. sec. rocks Engl., 101 (Westw., 124). *Pl.* 6, *fig.* 24.

1295. ——— ———. (Buprestidæ or Elateridæ.)

Localities: Wainlode, Apperley, Brockeridge, Churchdown, Aust, England.
Horizon: Lower Lias.

1845. Brodie. Foss. ins. sec. rocks Engl., 101 (Westw., 124). *Pl.* 6, *fig.* 25.

1296. ——— ———. (Buprestidæ or Elateridæ.)

Localities: Wainlode, Apperley, Brockeridge, Churchdown, Aust, England.
Horizon: Lower Lias.

1845. Brodie. Foss. ins. sec. rocks Engl., 101 (Westw., 124). *Pl.* 6, *fig.* 26.

1297. ——— ———. (Buprestidæ.)

Locality: Strensham, England. Horizon: Lower Lias.

1845. Brodie. Foss. ins. sec. rocks Engl., 101 (Westw., 124). *Pl.* 10, *fig.* 1.

1298. ——— ——— (abdomen). (Buprestidæ?)

Locality: Höganäs, Sweden. Horizon: Rhætic.

1878. Heer. Förhandl. geol. fören. Stockh., iv: 196. *Pl.* 13, *figs.* 7, 7*b*.

1299. ——— ———. (Buprestidæ.)

Locality: England. Horizon: Lias.

1871. Phillips. Geology of Oxford, 123.

1300. ——— ——— (larva). (Carabidæ?)

Locality: Ust Balei, Siberia. Horizon: Lias.

1889. {Brauer-Redtenb.-Ganglb.} Mém. acad. sc. St.-Pétersb., (7), xxxvi, No. 15: 20.

1301. ——— ———. (Carabidæ.)

Localities: Apperley, Brockeridge, England. Horizon: Lower Lias.
1845. Brodie. Foss. ins. sec. rocks Engl., 101 (Westw., 124). *Pl.* 6, *fig.* 28.

1302. ——— ———. (Carabidæ.)

Localities: Apperley, Brockeridge, England. Horizon: Lower Lias.
1845. Brodie. Foss. ins. sec. rocks Engl., 101 (Westw., 124). *Pl.* 10, *fig.* 2.

1303. ——— ———. (Carabidæ.)

Locality: The Vallis, near Frome, England. Horizon: Lower Oolite.
1861. Moore. Quart. journ. geol. soc. Lond., xvii: 513.

1304. ——— ———. (Carabidæ.)

Locality: England. Horizon: Lias.
1871. Phillips. Geology of Oxford, 123.

1305. ——— ———. (Carabidæ.)

Locality: Durdlestone Bay, England. Horizon: Lower Purbecks.
1854. Westwood. Quart. journ. geol. soc. Lond., x: 380, 394. *Pl.* 16, *fig.* 1.

1306. ——— ———. (Carabidæ.)

Locality: Durdlestone Bay, England. Horizon: Lower Purbecks.
1854. Westwood. Quart. journ. geol. soc. Lond., x: 390, 394. *Pl.* 16, *fig.* 10.

1307. ——— ———. (Carabidæ?)

Locality: Durdlestone Bay, England. Horizon: Lower Purbecks.
1854. Westwood. Quart. journ. geol. soc. Lond., x: 390, 395. *Pl.* 16, *fig.* 30.

1308. ——— ———. (Carabidæ-Harpalina, or Chrysomelidæ.)

Locality: Vale of Wardour, England. Horizon: Purbecks.
1845. Brodie. Foss. ins. sec. rocks Engl., 32 (Westw., 117). *Pl.* 6, *fig.* 3.

1309. ——— ———. (Carabidæ-Harpalina.)

Localities: Binton, Wilmcote, England. Horizon: Lower Lias.
1873. Brodie. Distr. corr. foss. ins., 16.

1310. ——— ———. (Cerambycidæ-Prionini.)

Localities: Sevenhampton and Eyeford, England. Horizon: Stonesfield Slate.
1845. Brodie. Foss. ins. sec. rocks Engl., 47. *Pl.* 6, *fig.* 15.

1311. ——— ———. (Cerambycidæ-Prionini.)

Locality: England. Horizon: Stonesfield Slate.
1841. Westwood. Trans. ent. soc. Lond., iv, proc., 40.
See also Buprestis ———Buckland, xlvi'': 4–9.

1312. ——— ———. (Chrysomelidæ or Hydrophilidæ.)

Locality: Vale of Wardour, England. Horizon: Purbecks.
1845. Brodie. Foss. ins. sec. rocks Engl., 32 (Westw., 117). *Pl.* 6, *fig.* 12.

1313. ——— ———. (Chrysomelidæ or Tenebrionidæ-Pimeliinæ.)

Locality: Eyeford, England. Horizon: Stonesfield Slate.
1845. Brodie. Foss. ins. sec. rocks Engl., 48. *Pl.* 6, *fig.* 20.

1314. —— ——. (Chrysomelidæ or Curculionidæ.)

Locality: Hasfield, England. Horizon: Lower Lias.

1845. Brodie. Foss. ins. sec. rocks Engl., 101. *Pl.* 6, *fig.* 27.

1315. —— ——. (Chrysomelidæ or Curculionidæ.)

Locality: Hasfield, England. Horizon: Lower Lias.

1845. Brodie. Foss. ins. sec. rocks Engl., 101 (Westw., 124). *Pl.* 6, *fig.* 32.

1316. —— ——. (Chrysomelidæ or Curculionidæ.)

Locality: Hasfield, England. Horizon: Lower Lias.

1845. Brodie. Foss. ins. sec. rocks Engl., 101 (Westw., 124). *Pl.* 6, *fig.* 33.

1317. —— ——. (Chrysomelidæ or Curculionidæ.)

Locality: Hasfield, England. Horizon: Lower Lias.

1845. Brodie. Foss. ins. sec. rocks Engl., 101 (Westw., 124). *Pl.* 6, *fig.* 34.

1318. —— ——. (Chrysomelidæ.)

Locality: Forthampton, England. Horizon: Lower Lias.

1845. Brodie. Foss. ins. sec. rocks Engl., 101. *Pl.* 7, *fig.* 7.

1319. —— ——. (Chrysomelidæ or Curculionidæ.)

Locality: Apperley, England. Horizon: Lower Lias.

1873. Brodie. Distr. corr. foss. ins., 16.

1320. —— ——. (Chrysomelidæ.)

Locality: England. Horizon: Lias.

1871. Phillips. Geology of Oxford, 123.

1321. —— ——. (Chrysomelidæ or Curculionidæ.)

Locality: Vale of Wardour, England. Horizon: Purbecks.

1845. Westwood. Brodie, Foss. ins. sec. rocks Engl., 32, 117. *Pl.* 6, *fig.* 14.

—— —— (Chrysomelidæ or Carabidæ-Harpalina). See —— —— (**Carabidæ-Harpalina**) Brodie, vi: 3.

1322. —— ——. (Coccinellidæ?)

Locality: Durdlestone Bay, England. Horizon: Middle Purbecks.

1854. Westwood. Quart. journ. geol. soc. Lond., x: 383, 394. *Pl.* 15, *fig.* 9.

1323. —— ——. (Coccinellidæ?)

Locality: Durdlestone Bay, England. Horizon: Lower Purbecks.

1854. Westwood. Quart. journ. geol. soc. Lond., x: 389, 394. *Pl.* 16, *fig.* 8.

1324. —— ——. (Coccinellidæ?)

Locality: Durdlestone Bay, England. Horizon: Lower Purbecks.

1854. Westwood. Quart. journ. geol. soc. Lond., x: 389, 394. *Pl.* 16, *fig.* 9.

1325. —— ——. (Curculionidæ.)

Locality: Ust Balei, Siberia. Horizon: Lias.

1889. Brauer-Redtenb.-Ganglb. Mém. acad. sc. St.-Pétersb., (7), xxxvi, No. 15: 19. *Pl.* [2], *fig.* 24.

1326. ——— ———. (Curculionidæ.)

Locality: Vale of Wardour, England. **Horizon:** Purbecks.

1845. **Brodie.** Foss. ins. sec. rocks Engl., 32 (Westw., 117). *Pl.* 6, *fig.* 4.

1327. ——— ———. (Curculionidæ.)

Locality: Vale of Wardour, England. **Horizon:** Purbecks.

1845. **Brodie.** Foss. ins. sec. rocks Engl., 32 (Westw., 117). *Pl.* 6, *fig.* 8.

1328. ——— ———. (Curculionidæ.)

Localities: Eyeford, Stonesfield, England. **Horizon:** Stonesfield slate.

1873. **Brodie.** Distr. corr. foss. ins., 14.

1329. ——— ———. (Curculionidæ.)

Locality: Durdlestone Bay, England. **Horizon:** Lower Purbecks.

1854. **Westwood.** Quart. journ. geol. soc. Lond., x: 390, 395. *Pl.* 16, *fig.* 33.

——— ——— (Curculionidæ or Chrysomelidæ.) See ——— ——— (Chrysomelidæ)
Brodie, vi: 14.

——— ——— (Curculionidæ or Chrysomelidæ.) See ——— ——— (Chrysomelidæ)
Brodie, vi: 27.

——— ——— (Curculionidæ or Chrysomelidæ.) See ——— ——— (Chrysomelidæ)
Brodie, vi: 32.

——— ——— (Curculionidæ or Chrysomelidæ.) See ——— ——— (Chrysomelidæ)
Brodie, vi: 33.

——— ——— (Curculionidæ or Chrysomelidæ.) See ——— ——— (Chrysomelidæ)
Brodie, vi: 34.

——— ——— (Curculionidæ or Chrysomelidæ.) See ——— ——— (Chrysomelidæ)
Brodie, Distr. foss. ins., 16.

1330. ——— ———. (Dytiscidæ.)

Locality: Durdlestone Bay, England. **Horizon:** Middle Purbecks.

1854. **Westwood.** Quart. journ. geol. soc. Lond., x: 383, 394. *Pl.* 15, *fig.* 13, large fig.

1331. ——— ———. (Elateridæ.)

Locality: Vale of Wardour, England. **Horizon:** Purbecks.

1845. **Brodie.** Foss. ins. sec. rocks Engl., 32 (Westw., 117). *Pl.* 6, *fig.* 6,

1332. ——— ———. (Elateridæ.)

Locality: Vale of Aylesbury, England. **Horizon:** Purbecks.

1845. **Brodie.** Foss. ins. sec. rocks Engl., 32 (Westw., 117). *Pl.* 6, *fig.* 7.

1333. ——— ———. (Elateridæ.)

Locality: Apperley, England. **Horizon:** Lower Lias.

1845. **Brodie.** Foss. ins. sec. rocks Engl., 101. *Pl.* 7, *fig.* 1.

1334. ——— ———. (Elateridæ.)

Locality: Apperley, England. **Horizon:** Lower Lias.

1845. **Brodie.** Foss. ins. sec. rocks Engl., 101. *Pl.* 7, *fig.* 2.

1335. —— ——. (Elateridæ.)

Localities: Wainlode, Westbury, England. Horizon: Lower Lias.

1873. Brodie. Distr. corr. foss. ins., 16.

1336. —— ——. (Elateridæ or Lampyridæ-Telephorini.)

Localities: Brown's Wood and Stooper's Wood, near Henley in Arden, England. Horizon: Lias.

1875. Brodie. Lower Lias Eatington, etc., 10.

—— —— (Elateridæ or Buprestidæ). See —— —— (Buprestidæ) Brodie, vi: 23.

—— —— (Elateridæ or Buprestidæ). See —— —— (Buprestidæ) Brodie, vi: 24.

—— —— (Elateridæ or Buprestidæ). See —— —— (Buprestidæ) Brodie, vi: 25.

—— —— (Elateridæ or Buprestidæ). See —— —— (Buprestidæ) Brodie, vi: 26.

1337. —— ——. (Hydrophilidæ-Helophorini.)

Locality: Vale of Wardour, England. Horizon: Purbecks.

1845. Brodie. Foss. ins. sec. rocks Engl., 32 (Westw., 117). *Pl.* 6, *fig.* 13.

—— —— (Hydrophilidæ or Chrysomelidæ). See —— —— (Chrysomelidæ) Brodie, vi: 12.

1338. —— ——. (Lampyridæ-Telephorini.)

Locality: Forthampton, England. Horizon: Lower Lias.

1845. Brodie. Foss. ins. sec. rocks Engl., 101 (Westw., 124). *Pl.* 6, *fig.* 29.

1339. —— ——. (Lampyridæ-Telephorini.)

Localities: Wainlode, Brown's Wood, England. Horizon: Lower Lias.

1873. Brodie. Distr. corr. foss. ins., 16.

1340. —— ——. (Lampyridæ-Telephorini.)

Locality: England. Horizon: Lias.

1871. Phillips. Geology of Oxford, 123.

—— —— (Lampyridæ-Telephorini, or Elateridæ). See —— —— (Elateridæ) Brodie, Lower Lias, 10).

1341. —— ——. (Meloidæ-Cantharini.)

Locality: Vale of Wardour, England. Horizon: Purbecks.

1845. Brodie. Foss. ins. sec. rocks Engl., 32 (Westw., 117). *Pl.* 6, *fig.* 11.

1342. —— ——. (Rhynchophora.)

Locality: Vale of Wardour, England. Horizon: Purbecks.

1845. Brodie. Foss. ins. sec. rocks Engl., 32 (Westw., 116). *Pl.* 3, *fig.* 4.

—— —— (Staphylinidæ). See II, NEUROPTERA, Idem.

1343. ——— ———. (Tenebrionidæ.)

Locality: Vale of Wardour, England. **Horizon:** Purbecks.

1845. Brodie. Foss. ins. sec. rocks Engl., 32 (Westw., 116). *Pl.* 6, *fig.* 2.

——— ——— (Tenebrionidæ-Pimeliinæ, or Chrysomelidæ). See ——— ——— (Chrysomelidæ) Brodie, vi: 20.

1344. **Actea sphinx.** (Buprestidæ.)

Localities: Kelheim, Solenhofen, Bavaria. **Horizon:** Jura.

1842. Münster. MSS.
1842. Germar. Münster, Beitr. z. petref., v: 85–87. *Pl.* 9, *fig.* 6.
1852. Giebel. Deutschl. petref., 637.
1862. Hagen. Palaeontogr., x: 111 (Hemipteron).
1869. Weyenbergh. Tijdschr. v. ent., (2), iv: 233 [133].
1874. " Periód. zool., i: 100.
1874. " Énum. syst. faune ent. mésoz., 14.
1877. Assmann. Ber. versamml. deutsch. naturf., l: 192 (= Chrysobothris veterana).
1885. Scudder. Zittel, Handb. palaeont., i, th. ii: 782.
1886. " Zittel-Barrois, Traité de paléont., ii: 782.

See also Sphenoptera sphinx, etc.

1345. **Agrilium cyllabacus.** (Buprestidæ.)

Locality: Durdlestone Bay, England. **Horizon:** Lower Purbecks.

1854. Westwood. Quart. journ. geol. soc. Lond., x: 389, 395. *Pl.* 16, *fig.* 32.

See also Agrilus cyllabacus.

1346. **Agrilium cyllarus.** (Buprestidæ.)

Locality: Durdlestone Bay, England. **Horizon:** Lower Purbecks.

1854. Westwood. Quart. journ. geol. soc. Lond., x: 389, 395. *Pl.* 16, *fig.* 29.

See also Agrilus cyllarus.

1347. **Agrilium stomphax.** (Buprestidæ.)

Locality: Durdlestone Bay, England. **Horizon:** Lower Purbecks.

1854. Westwood. Quart. journ. geol. soc. Lond., x: 389, 395. *Pl.* 16, *fig.* 23.

See also Agrilus stomphax.

1348. **Agrilium strombus.** (Buprestidæ.)

Locality: Durdlestone Bay, England. **Horizon:** Lower Purbecks.

1854. Westwood. Quart. journ. geol. soc. Lond., x: 389, 394–395. *Pl.* 16, *fig.* 6.

See also Agrilus strombus.

1349. **Agrilus cyllabacus.** (Buprestidæ.)

Locality: Durdlestone Bay, England. **Horizon:** Lower Purbecks.

1856. Giebel. Insect. d. vorwelt, 88.

See also Agrilium cyllabacus.

1350. **Agrilus cyllarus.** (Buprestidæ.)

Locality: Durdlestone Bay, England. **Horizon:** Lower Purbecks.

1856. Giebel. Insect. d. vorwelt, 88.

See also Agrilium cyllarus.

1351. Agrilus stomphax. (Buprestidæ

Locality: Durdlestone Bay, England. Horizon: Lower Purbecks.

1856. Giebel. Insect. d. vorwelt, 88.
See also Agrilium stomphax.

1352. Agrilus strombus. (Buprestidæ.)

Locality: Durdlestone Bay, England. Horizon: Lower Purbecks.

1856. Giebel. Insect. d. vorwelt, 87.
See also Agrilium strombus.

1353. Amara ? pseudo-zabrus. (Carabidæ.)

Locality: Eichstadt, Bavaria. Horizon: Jura.

1886. Deichmüller. Ins. lith. schichten dresd. mus., 64–65. *Pl.* 5, *fig.* 9.

1354. Ancylocheira ——. (Buprestidæ.)

Locality: Gloucestershire, England. Horizon: Lias.

1843. Brodie. Lond. Edinb. Dubl. phil. mag., (3), xxiii: 529.
1843. " Ann. nat. hist., xi: 509.

1355. Ancylocheira liasina. (Buprestidæ.)

Locality: Strensham, England. Horizon: Lower Lias.

1845. Brodie. Foss. ins. sec. rocks Engl. (unnamed). *Pl.* 10, *fig.* 1.
1856. Giebel. Insect. d. vorwelt, 82–83 (Ancylochira).

1356. Ancylocheira teleas. (Buprestidæ.)

Locality: Durdlestone Bay, England. Horizon: Lower Purbecks.

1856. Giebel. Insect. d. vorwelt, 83 (Ancylochira).
See also Buprestium teleas.

Ancylochira liasina. See Ancylocheira liasina.

Ancylochira teleas. See Ancylocheira teleas.

1357. Anisorhynchus ? lapideus. (Otiorhynchidæ.)

Locality: Solenhofen, Bavaria. Horizon: Jura.

1869. Weyenbergh. Arch. mus. Teyl., ii: 285–286. *Pl.* 36, *figs.* 40, 40*a*.
1869. " Ins. foss. calc. lithogr., 39–40. *Pl.* 3, *figs.* 40, 40*a*.
1869. " Tijdschr. v. ent., (2), iv: 232 [132].
1874. " Period zool., i: 104.
1874. " Énum. syst. faune ent. mésoz., 18.
1888. Oppenheim. Palaeontogr., xxxiv: 241–242. *Pl.* 31, *fig.* 7.

1358. Aphodiites protogæus. (Scarabæidæ.)

Locality: Schambelen, Switzerland. Horizon: Lias.

1865. Heer. Urwelt der Schweiz, 90. *Pl.* 8, *fig.* 15.
1872. " Monde prim. Suisse, 110. *Pl.* 8, *fig.* 15.
1876. " Prim. world Switz., i: 89. *Pl.* 8, *fig.* 15.
1879. " Urwelt der Schweiz, 2e aufl., 100. *Pl.* 8, *fig.* 15.
1885. Scudder. Zittel, Handb. palaeont., i, th. ii: 794. *Fig.* 1026.
1886. " Zittel-Barrois, Traité de paléont., ii: 795. *Fig.* 1044.

1359. Archiorhynchus angusticollis. (Curculionidæ.)

Locality: Kome, North Greenland. Horizon: Cretaceous.

1874. Heer. Kreide flora arct. zone (K. sv. vet.-akad. handl., xii; Flora foss. arct., 3): 91–92. *Pl.* 17, *figs.* 13 [15].
1883. " Flora foss. groenl., ii: 143.

Bellengera ovalis. See Bellingera ovalis.

1360. Bellingera laticollis. (Cryptophagidæ.)

Locality: Schambelen, Switzerland. Horizon: Lias.

1865. Heer. Urwelt der Schweiz. *Pl.* 8, *fig.* 5.
1872. " Monde prim. Suisse. *Pl.* 8, *fig.* 5.
1876. " Prim. world Switz., i. *Pl.* 8, *fig.* 5.
1879. " Urwelt der Schweiz, 2^e^ aufl. (index). *Pl.* 8, *fig.* 5.
1885. Scudder. Zittel, Handb. palaeont., i, th. ii: 800. *Fig.* 1050.
1886. " Zittel-Barrois, Traité de paléont., ii: 800. *Fig.* 1067

1361. Bellingera ovalis. (Cryptophagidæ.)

Localities: Aust, England; Schambelen, Aargau, Switzerland; Dobbertin, Germany.
Horizon: Lias (Rhætic).

1852. Heer. Lias-insel Aargau, 12. *Pl.*, *fig.* 10.
1856. Giebel. Insect. d. vorwelt, 497.
1865. Heer. Urwelt der Schweiz, 95. *Pl.* 8, *fig.* 6.
1872. " Monde prim. Suisse, 116. *Pl.* 8, *fig.* 6.
1873. Brodie. Distr. corr. foss. ins., 17 (Bellengera).
1876. Heer. Prim. world Switz., i: 94. *Pl.* 8, *fig.* 6.
1879. " Urwelt der Schweiz, 2^e^ aufl., 105. *Pl.* 8, *fig.* 6.
1884. E. Geinitz. Zeitschr. deutsch. geol. gesellsch., 1884: 583 (Bellingeria)

Bellingeria ovalis. See Bellingera ovalis.

Berosus ——. See Cercyon (or Berosus) —— Brodie

1362. Berosus ——. (Hydrophilidæ.)

Locality: Aust, England. Horizon: Lower Lias.

1845. Brodie. Foss. ins. sec. rocks Engl., 101, 125. *Pl.* 9, *fig.* 10.
See also Cercyon —— Brodie, Berosus liasinus.

1363. Berosus liasinus. (Hydrophilidæ.)

Locality: Aust, England. Horizon: Lower Lias.

1856. Giebel. Insect. d. vorwelt, 52.
See also Berosus —— Brodie.

1364. Blaps studeri. (Tenebrionidæ.)

Locality: Sevenhampton, England. Horizon: Stonesfield Slate.

1845. Brodie. Foss. ins. sec. rocks Engl., 48 (unnamed). *Pl.* 6, *fig.* 16.
1856. Giebel. Insect. d. vorwelt, 108–109.

1365. Blapsidium egertoni. (Tenebrionidæ.)

Locality: England. Horizon: Stonesfield Slate.

1871. Phillips. Geology of Oxford, 173.
1873. Brodie. Distr. corr. foss. ins., 14.
See also Blapsium egertoni.

1351. Agrilus stomphax. (Buprestidæ

Locality: Durdlestone Bay, England. Horizon: Lower Purbecks.

1856.	Giebel.	Insect. d. vorwelt, 88.

See also Agrilium stomphax.

1352. Agrilus strombus. (Buprestidæ.)

Locality: Durdlestone Bay, England. Horizon: Lower Purbecks.

1856.	Giebel.	Insect. d. vorwelt, 87.

See also Agrilium strombus.

1353. Amara ? pseudo-zabrus. (Carabidæ.)

Locality: Eichstadt, Bavaria. Horizon: Jura.

1886.	Deichmüller.	Ins. lith. schichten dresd. mus., 64–65. *Pl.* 5, *fig.* 9.

1354. Ancylocheira ——. (Buprestidæ.)

Locality: Gloucestershire, England. Horizon: Lias.

1843.	Brodie.	Lond. Edinb. Dubl. phil. mag., (3), xxiii: 529.
1843.	"	Ann. nat. hist., xi: 509.

1355. Ancylocheira liasina. (Buprestidæ.)

Locality: Strensham, England. Horizon: Lower Lias.

1845.	Brodie.	Foss. ins. sec. rocks Engl. (unnamed). *Pl.* 10, *fig.* 1.
1856.	Giebel.	Insect. d. vorwelt, 82–83 (Ancylochira).

1356. Ancylocheira teleas. (Buprestidæ.)

Locality: Durdlestone Bay, England. Horizon: Lower Purbecks.

1856.	Giebel.	Insect. d. vorwelt, 83 (Ancylochira).

See also Buprestium teleas.

Ancylochira liasina. See Ancylocheira liasina.

Ancylochira teleas. See Ancylocheira teleas.

1357. Anisorhynchus ? lapideus. (Otiorhynchidæ.)

Locality: Solenhofen, Bavaria. Horizon: Jura.

1869.	Weyenbergh.	Arch. mus. Teyl., ii: 285–286. *Pl.* 36, *figs.* 40, 40*a*.
1869.	"	Ins. foss. calc. lithogr., 39–40. *Pl.* 3, *figs.* 40, 40*a*.
1869.	"	Tijdschr. v. ent., (2), iv: 232 [132].
1874.	"	Periód zool., i: 104.
1874.	"	Énum. syst. faune ent. mésoz., 18.
1888.	Oppenheim.	Palaeontogr., xxxiv: 241–242. *Pl.* 31, *fig.* 7.

1358. Aphodiites protogæus. (Scarabæidæ.)

Locality: Schambelen, Switzerland. Horizon: Lias.

1865.	Heer.	Urwelt der Schweiz, 90. *Pl.* 8, *fig.* 15.
1872.	"	Monde prim. Suisse, 110. *Pl.* 8, *fig.* 15.
1876.	"	Prim. world Switz., i: 89. *Pl.* 8, *fig.* 15.
1879.	"	Urwelt der Schweiz, 2e aufl., 100. *Pl.* 8, *fig.* 15.
1885.	Scudder.	Zittel, Handb. palaeont., i, th. ii: 794. *Fig.* 1026.
1886.	"	Zittel-Barrois, Traité de paléont., ii: 795. *Fig.* 1044.

1359. **Archiorhynchus angusticollis.** (Curculionidæ.)

Locality: Kome, North Greenland. Horizon: Cretaceous.

1874.	Heer.	Kreide flora arct. zone (K. sv. vet.-akad. handl., xii; Flora foss. arct., 3): 91-92. *Pl.* 17, *figs.* 13 [15].
1883.	"	Flora foss. groenl., ii: 143.

Bellengera ovalis. See Bellingera ovalis.

1360. **Bellingera laticollis.** (Cryptophagidæ.)

Locality: Schambelen, Switzerland. Horizon: Lias.

1865.	Heer.	Urwelt der Schweiz. *Pl.* 8, *fig.* 5.
1872.	"	Monde prim. Suisse. *Pl.* 8, *fig.* 5.
1876.	"	Prim. world Switz., i. *Pl.* 8, *fig.* 5.
1879.	"	Urwelt der Schweiz, 2^{e} aufl. (index). *Pl.* 8, *fig.* 5.
1885.	Scudder.	Zittel, Handb. palaeont., i, th. ii: 800. *Fig.* 1050.
1886.	"	Zittel-Barrois, Traité de paléont., ii: 800. *Fig.* 1067

1361. **Bellingera ovalis.** (Cryptophagidæ.)

Localities: Aust, England; Schambelen, Aargau, Switzerland; Dobbertin, Germany.
Horizon: Lias (Rhætic).

1852.	Heer.	Lias-insel Aargau, 12. *Pl.*, *fig.* 10.
1856.	Giebel.	Insect. d. vorwelt, 497.
1865.	Heer.	Urwelt der Schweiz, 95. *Pl.* 8, *fig.* 6.
1872.	"	Monde prim. Suisse, 116. *Pl.* 8, *fig.* 6.
1873.	Brodie.	Distr. corr. foss. ins., 17 (Bellengera).
1876.	Heer.	Prim. world Switz., i: 94. *Pl.* 8, *fig.* 6.
1879.	"	Urwelt der Schweiz, 2^{e} aufl., 105. *Pl.* 8, *fig.* 6.
1884.	E. Geinitz.	Zeitschr. deutsch. geol. gesellsch., 1884: 583 (Bellingeria)

Bellingeria ovalis. See Bellingera ovalis.

Berosus ———. See Cercyon (or Berosus) ——— Brodie

1362. **Berosus ———.** (Hydrophilidæ.)

Locality: Aust, England. Horizon: Lower Lias.

1845.	Brodie.	Foss. ins. sec. rocks Engl., 101, 125. *Pl.* 9, *fig.* 10.

See also Cercyon ——— Brodie, Berosus liasinus.

1363. **Berosus liasinus.** (Hydrophilidæ.)

Locality: Aust, England. Horizon: Lower Lias.

1856.	Giebel.	Insect. d. vorwelt, 52.

See also Berosus ——— Brodie.

1364. **Blaps studeri.** (Tenebrionidæ.)

Locality: Sevenhampton, England. Horizon: Stonesfield Slate.

1845.	Brodie.	Foss. ins. sec. rocks Engl., 48 (unnamed). *Pl.* 6, *fig.* 16.
1856.	Giebel.	Insect. d. vorwelt, 108-109.

1365. **Blapsidium egertoni.** (Tenebrionidæ.)

Locality: England. Horizon: Stonesfield Slate.

1871.	Phillips.	Geology of Oxford, 173.
1873.	Brodie.	Distr. corr. foss. ins., 14.

See also Blapsium egertoni.

1366. Blapsium egertoni. (Tenebrionidæ.)

Locality: England. Horizon: Stonesfield Slate.

1854. Westwood. Quart. journ. geol. soc. Lond., x: 393. *Pl.* 14, *fig.* 13
1856. Giebel. Insect. d. vorwelt, 109.
See also Blapsidium egertoni.

1367. Bostrychus —— (borings). (Ptinidæ.)

Compared with B. chalcographus.

Locality: Lottinghem, Pas de Calais, France. Horizon: Gault.

1876. Brongniart. Ann. soc. ent. Fr., (5), vi, bull. 115-116.
1877. " Ann. soc. ent. Fr., (5), vii: 217-218. *Pl.* 7″, *fig.* 5.
1878. Girard. La nature, vi: 112. *Fig.* 5.

1368. Bothynophora elegans.

Locality: Schambelen, Switzerland. Horizon: Lias.

1865. Heer. Urwelt der Schweiz. *Pl.* 7, *fig.* 20.
1872. " Monde prim. Suisse. *Pl.* 7, *fig.* 20.
1876. " Prim. world Switz. *Pl.* 7, *fig.* 20.
1879. " Urwelt der Schweiz, 2e aufl. *Pl.* 7, *fig.* 20.

1369. Brachinites truncatus. (Carabidæ.)

Locality: Vyšerovic, Bohemia. Horizon: Cretaceous.

1882. Fritsch. Mojs., Beitr. paläont. Oestr.-Ung., ii: 5-6. *Pl.* 2, *fig.* 3 (2 *figs.*).
1882. " Foss. arthr. steink. u. kreidef. Böhmens, 5-6. *Pl.* 2 *fig.* 3 (2 *figs.*).
1884. " Vesmír, xiii: 205-206. *Figs.* 3, 3*a*.

1370. Bruchus ——. (Bruchidæ.)

Locality: Eyeford, England. Horizon: Stonesfield Slate.

1845. Murchison. Geol. Cheltenham, 68.

1371. Buprestidium ——. (Buprestidæ.)

Localities: Stonesfield, Eyeford, England. Horizon: Stonesfield Slate.

1871. Phillips. Geology of Oxford, 173. *Digr.* 33.

1372. Buprestis or Elater ——. (Buprestidæ.)

Locality: Strensham, England. Horizon: Lower Lias.

1873. Brodie. Distr. corr. foss. ins., 16.

1373. Buprestis ——. (Buprestidæ.)

Locality: Stonesfield, England. Horizon: Stonesfield Slate.

1837. Buckland. Geol. and mineral., ii: 78. *Pl.* 46″, *figs.* 4-9.
1838. " Géologie, éd. Agassiz, ii: expl. pl. xlvi″, p. 4. *Pl.* 46″, *figs.* 4-9.
1865. Lyell. Elem. geol., 6th ed., 403. *Fig.* 410.
See also —— —— (Cerambycidæ-Prionini) Westw.

1374. Buprestis ——. (Buprestidæ.)

Locality: Japan. Horizon: (in chalcedony.)

1837. Buckland. Geol. and mineral., ii: 78.
1838. " Géologie, éd. Agassiz, ii: expl. pl. 46″, p. 5.

1375. Buprestis ——. (Buprestidæ.)

Locality: Eyeford, England. Horizon: Stonesfield Slate.

1845. Murchison. Geol. Cheltenham, 68. *Pl.* 4, *fig.* 3.

1376. Buprestis ——. (Buprestidæ.)
Locality: Wainlode Hill, England. Horizon: Lower Lias.
1845. Murchison. Geol. Cheltenham, 81. *Pl.* 9, *fig.* 4.

1377. Buprestis? ——. (Buprestidæ.)
Compared with B. variabilis, New Holland.
Locality: Stonesfield, England. Horizon: Stonesfield Slate.
1824. Prévost. Ann. sc. nat., iv: 417. *Pl.* 18, *fig.* 26.
1839. Brullé. Gisem. ins. foss., 12.

1378. Buprestis bucklandi. (Buprestidæ.)
Locality: Stonesfield, England. Horizon: Stonesfield Slate.
1844. Mantell. Medals of creation, ii: 577–578. *Lign.* 124, *fig.* 1.
1854. " Medals of creation, 2d ed., ii: 554. *Lign.* 181, *fig.* 1.

1379. Buprestis lapidelythris. (Buprestidæ.)
Locality: Solenhofen, Bavaria. Horizon: Jura.
1869. Weyenbergh. Arch. mus. Teyl., ii: 283. *Pl.* 37, *figs.* 46, 46*a*.
1869. " Ins. foss. calc. lithogr., 37. *Pl.* 4, *figs.* 46, 46*a*.
1869. " Tijdschr. v. ent., (2), iv: 232 [132].
1874. " Periód. zool., i: 103.
1874. " Énum. syst. faune ent. mésoz., 17.

1380. Buprestites bractoides. (Buprestidæ.)
Locality: Skelton Park Pit, England. Horizon: Lias.
1876. Blake. Tate and Blake, Yorkshire lias, 426. *Pl.* 16, *fig.* 5.

1381. Buprestites lyellii. (Buprestidæ.)
Locality: Schambelen, Switzerland. Horizon: Lias.
1865. Heer. Urwelt der Schweiz, 88. *Pl.* 7, *fig.* 11.
1872. " Monde prim. Suisse, 108. *Pl.* 7, *fig.* 11.
1876. " Prim. world Switz., i: 88. *Pl.* 7, *fig.* 11.
1879. " Urwelt der Schweiz, 2e aufl., 98. *Pl.* 7, *fig.* 11.

1382. Buprestites pterophylli. (Buprestidæ.)
Locality: Vadutz, Switzerland. Horizon: Trias.
1865. Heer. Urwelt der Schweiz, 56.
1872. " Monde prim. Suisse, 68.
1876. " Prim. world Switz., i: 56.
1879. " Urwelt der Schweiz, 2e aufl., 65.
See also Glaphyroptera pterophylli.

1383. Buprestites rugulosus. (Buprestidæ.)
Locality: Bjuf, Sweden. Horizon: Rhætic.
1878. Heer. Förhandl. geol. fören. Stockh., iv: 194–195. *Pl.* 13, *figs.* 2, 2*b*, 2*c*.

1384. Buprestites scabriusculus. (Buprestidæ.)
Locality: Pechgraben, Austria. Horizon: Lias.
1879. Heer. Urwelt der Schweiz, 2e aufl., 92.

1385. Buprestites suprajurensis. (Buprestidæ.)
Locality: Eichstadt, Bavaria. Horizon: Jura.
1888. Oppenheim. Palaeontogr., xxxiv; 240. *Pl.* 31, *fig.* 21.

1386. **Buprestium bolbus.** (Buprestidæ.)

Locality: Durdlestone Bay, England. Horizon: Lower Purbecks.

1854. Westwood. Quart. journ. geol. soc. Lond., x: 386, 395. *Pl.* 17, *fig.* 5.
1856. Giebel. Insect. d. vorwelt, 80.

1387. **Buprestium dardanus.** (Buprestidæ.)

Locality: Durdlestone Bay, England. Horizon: Lower Purbecks.

1854. Westwood. Quart. journ. geol. soc. Lond., x: 389, 395. *Pl.* 16, *fig.* 38.
1856. Giebel. Insect. d. vorwelt, 80.

1388. **Buprestium gorgus.** (Buprestidæ.)

Locality: Durdlestone Bay, England. Horizon: Middle Purbecks.

1854. Westwood. Quart. journ. geol. soc. Lond., x: 383, 394. *Pl.* 15, *fig.* 7.
1856. Giebel. Insect. d. vorwelt, 79–80.

1389. **Buprestium stygnus.** (Buprestidæ.)

Locality: Durdlestone Bay, England. Horizon: Lower Purbecks.

1854. Westwood. Quart. journ. geol. soc. Lond., x: 389, 394–395. *Pl.* 16, *figs.* 11, 22.
1856. Giebel. Insect. d. vorwelt, 80.

1390. **Buprestium teleas.** (Buprestidæ.)

Locality: Durdlestone Bay, England. Horizon: Lower Purbecks.

1854. Westwood. Quart. journ. geol. soc. Lond., x: 386, 393. *Pl.* 14, *fig.* 19.
See also Ancylocheira teleas.

1391. **Buprestium valgus.** (Buprestidæ.)

Locality: Durdlestone Bay, England. Horizon: Lower Purbecks.

1854. Westwood. Quart. journ. geol. soc. Lond., x: 389, 395. *Pl.* 16, *fig.* 31.

1392. **Buprestium woodlei.** (Buprestidæ.)

Locality: Durdlestone Bay, England. Horizon: Lower Purbecks.

1854. Westwood. Quart. journ. geol. soc. Lond., x: 393. *Pl.* 14, *fig.* 11.
1856. Giebel. Insect. d. vorwelt, 80.

1393. **Byrrhydium arcuatum.** (Byrrhidæ.)

Locality: Schambelen, Switzerland. Horizon: Lias.

1865. Heer. Urwelt der Schweiz, 89. *Pl.* 8, *fig.* 9.
1872. " Monde prim. Suisse, 109. *Pl.* 8, *fig.* 9.
1876. " Prim. world Switz., i: 89. *Pl.* 8, *fig.* 9.
1879. " Urwelt der Schweiz, 2ᵉ aufl., 99. *Pl.* 8, *fig.* 9.

1394. **Byrrhydium morio.** (Byrrhidæ.)

Locality: Schambelen, Switzerland. Horizon: Lias.

1865. Heer. Urwelt der Schweiz, 89. *Pl.* 8, *fig.* 10.
1872. " Monde prim. Suisse, 109. *Pl.* 8, *fig.* 10.
1876. " Prim. world Switz., i: 89. *Pl.* 8, *fig.* 10.
1879. " Urwelt der Schweiz., 2ᵉ aufl., 99. *Pl.* 8, *fig.* 10.
1885. Scudder. Zittel, Handb. palaeont., i, th. ii: 798. *Fig.* 1041.
1886. " Zittel-Barrois, Traité de paléont., ii: 799. *Fig.* 1058.

1395. Byrrhydium troglodytes. (Byrrhidæ.)

Locality: Schambelen, Switzerland. Horizon: Lias.

1865.	Heer.	Urwelt der Schweiz, 64, 89.
1872.	“	Monde prim. Suisse, 90, 109.
1876.	“	Prim. world Switz., i: 64, 89.
1879.	“	Urwelt der Schweiz, 2e aufl., 73, 99.

1396. Camtodontus angliæ. (Carabidæ.)

Locality: Vale of Wardour, England. Horizon: Purbecks.

1845.	Brodie.	Foss. ins. sec. rocks Engl., 32 (unnamed). *Pl.* 6, *fig.* 8.
1856.	Giebel.	Insect. d. vorwelt, 65.

1397. Carabicina ? decipiens. (Carabidæ.)

Locality: Solenhofen, Bavaria. Horizon: Jura.

1842.	Germar.	Münster, Beitr. z. petref., v: 83–84. *Pl.* 9, *fig.* 4; *Pl.* 13, *fig.* 9.
1862.	Hagen.	Palaeontogr., x: 111.
1869.	Weyenbergh.	Arch. mus. Teyl., ii: 288. *Pl.* 37, *fig.* 55.
1869.	“	Ins. foss. calc. lithogr., 42. *Pl.* 4, *fig.* 55.
1869.	“	Tijdschr. v. ent., (2), iv: 231 [131.]
1874.	“	Periód. zool., i: 101.
1874.	“	Énum. syst. faune ent. mésoz., 15.
1877.	Assmann.	Ber. versamml. deutsch. naturf., l: 192.
1885.	Scudder.	Zittel, Handb. palaeont., i, th. ii: 815.
1886.	“	Zittel-Barrois, Traité de paléont., ii: 817.
1886.	“	Bull. U. S. geol. surv., No. 31: 97.

See also II, HYMENOPTERA, Apiaria lapidea.

1398. Carabidium dejeanianum. (Carabidæ.)

Locality: Durdlestone Bay, England. Horizon: Lower Purbecks.

1854.	Westwood.	Quart. journ. geol. soc. Lond., x: 389, 396. *Pl.* 18, *fig.* 1.
1856.	Giebel.	Insect. d. vorwelt, 61.

1399. Carabites ———. (Carabidæ.)

Locality: Solenhofen, Bavaria. Horizon: Jura.

1852.	Quenstedt.	Handb. petref., 313. *Pl.* 24, *fig.* 6*ab*.

1400. Carabites anthracinus. (Carabidæ.)

Locality: Aargau. Switzerland. Horizon: Lias.

1852.	Heer.	Lias-insel Aargau, 12. *Pl.*, *fig.* 3.
1856.	Giebel.	Insect. d. vorwelt, 497.

1401. Carabites bellus. (Carabidæ.)

Localities: Schambelen, Switzerland; Dobbertin, Mecklenburg. Horizon: Lias.

1865.	Heer.	Urwelt der Schweiz, 90. *Pl.* 8, *fig.* 22.
1872.	“	Monde prim. Suisse, 110. *Pl.* 8, *fig.* 22.
1876.	“	Prim. world Switz., i: 90. *Pl.* 8, *fig.* 22.
1879.	“	Urwelt der Schweiz, 2e aufl., 100. *Pl.* 8, *fig.* 22.
1884.	E. Geinitz.	Zeitschr. deutsch. geol. gesellsch., 1884: 583.

1402. Carabites deplanatus. (Carabidæ.)

Locality: Bjuf, Sweden. Horizon: Rhætic.

1878.	Heer.	Förhandl. geol. fören. Stockh., iv: 197. *Pl.* 13, *figs.* 8–9.

1403. **Carabites depressus.** (Carabidæ.)

Locality: Pechgraben, Austria. Horizon: Lias.

1879.	Heer.	Urwelt der Schweiz, 2^{e} aufl., 91–92.

1404. **Carabites harpalinus.** (Carabidæ.)

Locality: Schambelen, Switzerland. Horizon: Lias.

1865.	Heer.	Urwelt der Schweiz, 90.
1872.	"	Monde prim. Suisse, 110.
1876.	"	Prim. world Switz., i: 90.
1879.	"	Urwelt der Schweiz, 2^{e} aufl., 100.

1405. **Carabocera prisca.** (Carabidæ.)

Locality: Ust Balei, Siberia. Horizon: Lias.

1889.	Brauer-Redtenb.-Ganglb.	Mém acad. sc. St.-Pétersb., (7), xxxvi, No. 15: 18–19. *Pl.* [2], *fig.* 23.

1406. **Carabus ? ———.** (Carabidæ.)

Locality: Eyeford, England. Horizon: Stonesfield Slate.

1845.	Murchison.	Geol. Cheltenham, 68. *Pl.* 4, *fig.* 2.

1407. **Carabus elongatus.** (Carabidæ.)

Locality: Vale of Wardour, England. Horizon: Purbecks.

1845.	Brodie.	Foss. ins. sec. rocks Engl., 32 (Westw., 115–116). *Pl.* 2, *fig.* 1.
1856.	Giebel.	Insect. d. vorwelt, 60.

1408. **Carabus westwoodii.** (Carabidæ.)

Locality: Durdlestone Bay, England. Horizon: Lower Purbecks.

1854.	Westwood.	Quart. journ. geol. soc. Lond., x: 390, 395 (unnamed). *Pl.* 16, *fig.* 30.
1856.	Giebel.	Insect. d. vorwelt, 60–61.

1409. **Carabus winkleri.** (Carabidæ.)

Locality: Solenhofen, Bavaria. Horizon: Jura.

1869.	Weyenbergh.	Arch. mus. Teyl., ii: 278–279. *Pl.* 37, *figs.* 56, 56*a*.
1869.	"	Ins. foss. calc. lithogr., 32–33. *Pl.* 4, *figs.* 56, 56*a*.
1869.	"	Tijdschr. v. ent., (2), iv: 231 [131].
1874.	"	Periód. zool., i: 101.
1874.	"	Énum. syst. faune ent. mésoz., 15.

1410. **Cassida æquivoca.** (Chrysomelidæ.)

Locality: Solenhofen, Bavaria. Horizon: Jura.

1869.	Weyenbergh.	Arch. mus. Teyl., ii: 287–288. *Pl.* 36, *fig.* 39.
1869.	"	Ins. foss. calc. lithogr., 41–42. *Pl.* 3, *fig.* 39.
1869.	"	Tijdschr. v. ent., (2), iv: 233 [133].
1874.	"	Periód. zool., i: 105.
1874.	"	Énum. syst. faune ent. mésoz., 19.

1411. **Cerambycinus dubius.** (Cerambycidæ.)

Locality: Solenhofen, Bavaria. Horizon: Jura.

1839.	Münster.	MSS.
1839.	Germar.	Verhandl. leop.-carol. akad. naturf., xix: 208–210. *Pl.* 22, *fig.* 9.
1854.	Pictet.	Traité de paléont., 2^{e} éd., ii: 355. *Pl.* 40, *fig.* 8.
1862.	Hagen.	Palaeontogr., x: 110.
1877.	Assmann.	Ber. versamml. deutsch. naturf., l: 192.

See also **Mesosa germari, Cerambycinus germari.**

1412. Cerambycinus germari. (Cerambycidæ.)

Locality: Solenhofen, Bavaria. Horizon: Jura.

1886. Deichmüller. Ins. lith. schichten dresd. mus., 75, note.
See also C. dubius, etc.

1413. Cerambycites ——— (borings).

Compared with the borings of Cerambyx luridus; now regarded as borings of a mollusk, Gastrochæna amphisbœna Goldf. Cf. Scudd., Bibl. foss. ins., 13.

Localities: Welschufe, Rippchen, Bannewitz, Saxony. Horizon: Quadersandstein.

1839. Geinitz. Charakt. sächs. kreidegeb., 13. *Pls.* 3–5, 6, *fig.* 1.
1856. Giebel. Insect. d. vorwelt, 129.
See also Clytus ——— Giebel.

1414. Cerambycites dubius. (Cerambycidæ.)

Locality: Eichstadt, Bavaria. Horizon: Jura.

1886. Deichmüller. Ins. lith. schichten dresd. mus., 75. *Pl.* 5, *fig.* 19.
See also Ditomoptera dubia.

1415. Cerambycites minor. (Cerambycidæ.)

Locality: Eichstadt, Bavaria. Horizon: Jura.

1886. Deichmüller. Ins. lith. schichten dresd. mus., 74. *Pl.* 5, *fig.* 20.

1416. Cerambyx ———. (Cerambycidæ.)

Locality: Solenhofen, Bavaria. Horizon: Jura.

1820. Schlotheim. Petrefactenk., 42–43.

1417. Cercyon (or Berosus) ———. (Hydrophilidæ.)

Locality: Aust, England. Horizon: Rhætic.

1873. Brodie. Distr. corr. foss. ins., 17.

1418. Cercyon. (Hydrophilidæ.)

Locality: Aust, England. Horizon: Lower Lias.

1845. Westwood. Brodie, Foss. ins. sec. rocks Engl., 125. *Pl.* 9, *fig.* 10.
See also Berosus ——— Brodie.

1419. Cerylon striatum. (Colydiidæ.)

Locality: Vale of Wardour, England. Horizon: Purbecks.

1845. Brodie. Foss. ins. sec. rocks Engl., 32, 116. *Pl.* 3, *fig.* 1.
1856. Giebel. Insect. d. vorwelt, 125.
1885. Scudder. Zittel, Handb. palaeont., i, ii: 800. *Fig.* 1052.
1886. " Zittel-Barrois, Traité de paléont., ii: 800. *Fig.* 1069.

Cetonia defosfa. See Cetonia defossa.

1420. Cetonia defossa. (Scarabæidæ.)

Locality: Solenhofen, Bavaria. Horizon: Jura.

1869. Weyenbergh. Arch. mus. Teyl., ii: 282–283. *Pl.* 37, *fig.* 52.
1869. " Ins. foss. calc. lithogr., 36–37. *Pl.* 4, *fig.* 52.
1869. " Tijdschr. v. ent., (2), iv: 232 [132].
1874. " Periód. zool., i: 103 (defosfa).
1874. " Énum. syst. faune ent. mésoz., 17.

1421. Chlænius solitarius. (Carabidæ.)

Compared with C. velutinus, C. prasinus.

Locality: Eichstadt, Bavaria. Horizon: Jura.

1886. Deichmüller. Ins. lith. schichten dresd. mus., 65. *Pl.* 5, *fig.* 8.

1422. Chrysobothris veterana. (Buprestidæ.)

Locality: Solenhofen, Bavaria. Horizon: Jura.

1847. Heyden. Palaeontogr., i: 99–100. *Pl.* 12, *fig.* 4.
1856. Giebel. Insect. d. vorwelt, 497.
1869. Weyenbergh. Arch. mus. Teyl., ii: 288. *Pl.* 37, *fig.* 47.
1869. " Ins. foss. calc. lithogr., 42. *Pl.* 4, *fig.* 47.
1869. " Tijdschr. v. ent., (2), iv: 232 [132].
1874. " Periód. zool., i: 103.
1874. " Énum. syst. faune ent. mésoz., 17.
1877. Assmann. Ber. versamml. deutsch. naturf., 1: 192 (=Actea sphinx).
See also Sphenoptera sphinx, etc.

1423. Chrysomela ———. (Chrysomelidæ.)

Locality: Durdlestone Bay, England. Horizon: Lower Purbecks.

1854. Westwood. Quart. journ. geol. soc. Lond., x: 395 (unnamed). *Pl.* 17, *fig.* 2.
1856. Giebel. Insect. d. vorwelt, 121.

1424. Chrysomela andræi. (Chrysomelidæ.)

Locality: Forthampton, England. Horizon: Lower Lias.

1845. Brodie. Foss. ins. sec. rocks Engl., 101 (unnamed). *Pl.* 7, *fig.* 7.
1856. Giebel. Insect. d. vorwelt, 119.

1425. Chrysomela dubia. (Chrysomelidæ.)

Locality: Durdlestone Bay, England. Horizon: Lower Purbecks.

1854. Westwood. Quart. journ. geol. soc. Lond., x: 395 (unnamed). *Pl.* 16, *fig.* 24.
1856. Giebel. Insect. d. vorwelt, 120.

1426. Chrysomela dunkeri. (Chrysomelidæ.)

Locality: Durdlestone Bay, England. Horizon: Lower Purbecks.

1854. Westwood. Quart. journ. geol. soc. Lond., x: 395 (unnamed). *Pl.* 16, *fig.* 26.
1856. Giebel. Insect. d. vorwelt, 120.

1427. Chrysomela ignota. (Chrysomelidæ.)

Locality: Durdlestone Bay, England. Horizon: Lower Purbecks.

1854. Westwood. Quart. journ. geol. soc. Lond., x: 395 (unnamed). *Pl.* 16, *fig.* 15.
1856. Giebel. Insect. d. vorwelt, 120.

1428. Chrysomela liasina. (Chrysomelidæ.)

Locality: Hasfield, England. Horizon: Lower Lias.

1845. Brodie. Foss. ins. sec. rocks Engl., 101 (unnamed). *Pl.* 6, *fig.* 33.
1856. Giebel. Insect. d. vorwelt, 120.

1429. Chrysomela lithografica. (Chrysomelidæ.)

Locality: Solenhofen, Bavaria. Horizon: Jura.

1869. Weyenbergh. Arch. mus. Teyl., ii: 287. *Pl.* 36, *figs.* 35–36.
1869. " Ins. foss. calc. lithogr., 41. *Pl.* 3, *figs.* 35–36.
1869. " Tijdschr. v. ent., (2), iv: 233 [133].
1874. " Periód. zool., i: 105.
1874. " Énum. syst. faune ent. mésoz., 19.

1430. Chrysomela rara. (Chrysomelidæ.)

Locality: Solenhofen, Bavaria. **Horizon:** Jura.

1869. **Weyenbergh.** Arch. mus. Teyl., ii: 287. *Pl.* 36, *figs.* 34, 34*a*.
1869. " Ins. foss. calc. lithogr., 41. *Pl.* 3, *figs.* 34, 34*a*.
1869. " Tijdschr. v. ent., (2), iv: 233 [133].
1874. " Periód. zool., i: 105.
1874. " Énum. syst. faune ent. mésoz., 19.

1431. Chrysomelites jurassicus. (Chrysomelidæ.)

Locality: Eichstadt, Bavaria. **Horizon:** Jura.

1888. **Oppenheim.** Palaeontogr., xxxiv: 242. *Pl.* 31, *fig.* 25.

1432. Chrysomelites minimus. (Chrysomelidæ.)

Locality: Eichstadt, Bavaria. **Horizon:** Jura.

1888. **Oppenheim.** Palaeontogr., xxxiv: 242 (minima). *Pl.* 31, *fig.* 23.

1433. Chrysomelites prodromus. (Chrysomelidæ.)

Locality: Schambelen, Switzerland. **Horizon:** Lias.

1865. **Heer.** Urwelt der Schweiz, 89, 93. *Pl.* 8, *fig.* 13.
1872. " Monde prim. Suisse, 109, 114. *Pl.* 8, *fig.* 13.
1876. " Prim. world Switz., i: 89, 92. *Pl.* 8, *fig.* 13.
1879. " Urwelt der Schweiz, 2^e aufl., 99, 103. *Pl.* 8, *fig.* 13.
1885. **Scudder.** Zittel, Handb. palaeont., i, th. ii: 792. *Fig.* 1020.
1886. " Zittel-Barrois, Traité de paléont., ii: 792. *Fig.* 1038.

1434. Chrysomelites rothenbachi. (Chrysomelidæ.)

Locality: Rutihard, Basel, Switzerland. **Horizon:** Trias.

1877. **Heer.** Flora foss. helvet., 76. *Pl.* 27, *figs.* 9*b*, 9*c*.

1435. Cistelites insignis. (Cistelidæ.)

Locality: Schambelen, Switzerland. **Horizon:** Lias.

1865. **Heer.** Urwelt der Schweiz, 89. *Pl.* 8, *fig.* 11.
1872. " Monde prim. Suisse, 109. *Pl.* 8, *fig.* 11.
1876. " Prim. world Switz., i: 89. *Pl.* 8, *fig.* 11.
1879. " Urwelt der Schweiz, 2^e aufl., 99. *Pl.* 8, *fig.* 11.
1885. **Scudder.** Zittel, Handb. palaeont., i, th. ii: 791. *Fig.* 1016.
1866. " Zittel-Barrois, Traité de paléont., ii: 791. *Fig.* 1034.
1886. " Bull. U. S. geol. surv., No. 31: 70.

1436. Clytus ——. (Cerambycidæ.)

Locality: Welschufe, Saxony. **Horizon:** Quadersandstein.

1856. **Giebel.** Insect. d. vorwelt, 129.
See also Cerambycites —— Geinitz.

1437. Coccinella ——. (Coccinellidæ.)

Locality: Eyeford, England. **Horizon:** Stonesfield Slate.

1845. **Murchison.** Geol. Cheltenham, 68. *Pl.*. 4, *fig.* 1.

1438. Coccinella ——. (Coccinellidæ.)

Locality: England. **Horizon:** Upper Lias.

1845. **Murchison.** Geol. Cheltenham, 108. *Pl.* 8, *fig.* 5.

1439. Coccinella heydeni. (Coccinellidæ.)

Locality: Solenhofen, Bavaria. Horizon: Jura.

1869.	Weyenbergh.	Arch. mus. Teyl., ii: 288. *Pl.* 36, *figs.* 32, 32*a*.
1869.	"	Ins. foss. calc. lithogr., 42. *Pl.* 3, *figs.* 32, 32*a*.
1869.	"	Tijdschr. v. ent., (2), iv: 233 [133].
1874.	"	Periód. zool., i: 105.
1874.	"	Énum. syst. faune ent. mésoz., 19.

1440. Coccinella neptuni. (Coccinellidæ.)

Locality: Durdlestone Bay, England. Horizon: Lower Purbecks.

1854.	Westwood.	Quart. journ. geol. soc. Lond., x: 394 (unnamed). *Pl.* 16, *fig.* 9.
1856.	Giebel.	Insect. d. vorwelt, 123.
1885.	Scudder.	Zittel, Handb. palaeont., i, th. ii: 800. *Fig.* 1055.
1886.	"	Zittel-Barrois, Traité de paléont., ii: 800. *Fig.* 1072.

1441. Coccinella wittsii. (Coccinellidæ.)

Locality: Sevenhampton, England. Horizon: Stonesfield Slate.

1845.	Brodie.	Foss. ins. sec. rocks Engl., 48. *Pl.* 6, *fig.* 21.

See also Pimelia wittsi.

1442. Colymbetes ———. (Dytiscidæ.)

Locality: Vale of Wardour, England. Horizon: Purbecks.

1845.	Brodie.	Foss. ins. sec. rocks Engl., 32 (Westw., 117). *Pl.* 6, *fig.* 5.

See also Hydrophilus brodiei.

1443. Colymbetes arcuatus. (Dytiscidæ.)

Locality: Aargau, Switzerland. Horizon: Lias.

1852.	Heer.	Lias-insel Aargau, 12. *Pl., figs.* 4–5.
1856.	Giebel.	Insect. d. vorwelt, 497.

1444. Crypticus ungeri. (Tenebrionidæ.)

Locality: Durdlestone Bay, England. Horizon: Lower Purbecks.

1854.	Westwood.	Quart. journ. geol. soc. Lond., x: 393 (unnamed). *Pl.* 14, *fig.* 15.
1856.	Giebel.	Insect. d. vorwelt, 110.

1445. Cryptocephalus antiquus. (Chrysomelidæ.)

Locality: Solenhofen, Bavaria. Horizon: Jura.

1869.	Weyenbergh.	Arch. mus. Teyl., ii: 286. *Pl.* 36, *fig.* 38.
1869.	"	Ins. foss. calc. lithogr., 40. *Pl.* 3, *fig.* 38.
1869.	"	Tijdschr. v. ent., (2), iv: 233 [133].
1874.	"	Periód. zool., i: 104.
1874.	"	Énum. syst. faune ent. mésoz., 18.

1446. Cryptocephalus mesozoicus. (Chrysomelidæ.)

Locality: Solenhofen, Bavaria. Horizon: Jura.

1869.	Weyenbergh.	Arch. mus. Teyl., ii: 286. *Pl.* 36, *fig.* 37.
1869.	"	Ins. foss. calc. lithogr., 40. *Pl.* 3, *fig.* 37.
1869.	"	Tijdschr. v. ent., (2), iv: 233 [133].
1874.	"	Periód. zool., i: 105.
1874.	"	Énum. syst. faune ent. mésoz., 19.
1888.	Oppenheim.	Palaeontogr., xxxiv: 242–243. *Pl.* 31, *fig.* 24.

1447. Ctenicerium blissus. (Elateridæ.)

Locality: Durdlestone Bay, England. Horizon: Lower Purbecks.

1854. Westwood. Quart. journ. geol. soc. Lond., x: 389, 395. *Pl.* 16, *fig.* 36.

1448. Ctenicerium hylastes. (Elateridæ.)

Locality: Durdlestone Bay, England. Horizon: Lower Purbecks.

1854. Westwood. Quart. journ. geol. soc. Lond., x: 389, 395. *Pl.* 16, *fig.* 37.

1449. Curculio —— (leg). (Curculionidæ.)

Locality: Stonesfield, England. Horizon: Stonesfield Slate.

1837. Buckland. Geol. and mineral., ii: 78. *Pl.* 46″, *fig.* 10.
1838. " Géologie, éd. Agassiz, ii: expl. pl. 46″, pp. 4–5. *Pl.* 46″, *fig.* 10.

1450. Curculionidium ——. (Curculionidæ.)

Localities: Stonesfield, Eyeford, England. Horizon: Stonesfield Slate.

1871. Phillips. Geology of Oxford, 173. *Digr.* 34.

1451. Curculionites carlsoni. (Curculionidæ.)

Locality: Bjuf, Sweden. Horizon: Rhætic.

1878. Heer. Förhandl. geol. fören. Stockh., iv: 195. *Pl.* 13, *fig.* 4, 4*b*, 4*c*.

1452. Curculionites cretaceus. (Curculionidæ.)

Locality: Kome, North Greenland. Horizon: Cretaceous.

1874. Heer. Kreide-flora arct. zone (K. svensk. vetensk.-akad. handl., xii—Flora foss. arct., 3), 92. *Pl.* 17, *fig.* 14.
1883. " Flora foss. grönl., ii: 143.

1453. Curculionites liasinus. (Curculionidæ.)

Locality: Aargau, Switzerland. Horizon: Lias.

1852. Heer. Lias-insel Aargau, 15. *Pl.*, *figs.* 39–40.
1856. Giebel. Insect. d. vorwelt, 498.

1454. Curculionites parvulus. (Curculionidæ.)

Locality: Sofiero, Sweden. Horizon: Rhætic.

1878. Heer. Förhandl. geol. fören. Stockh., iv: 195. *Pl.* 13, *figs.* 3, 3*b*, 3*c*.

1455. Curculionites prodromus. (Curculionidæ.)

Locality: Vadutz, Liechtenstein. Horizon: Trias.

1853. Heer. Beschr. angeführt. pflanz. u. ins., 20–21. *Pl.* 7, *fig.* 13.
1853. " Esch., Geol. bemerk. (Neue denkschr. schweiz. gesellsch., xiii): 134–135. *Pl.* 7, *fig.* 13.
1865. " Urwelt der Schweiz, 56, 82.
1872. " Monde prim. Suisse, 68, 99.
1876. " Prim. world Switz., i: 56, 82.
1879. " Urwelt der Schweiz, 2^{e} aufl., 65.
1885. Scudder. Zittel, Handb. palaeont., i, th. ii: 783. *Fig.* 1007.
1886. " Zittel-Barrois, Traité de paléont., ii: 788. *Fig.* 1024.
1886. " Bull. U. S. geol. surv., No. 31: 66.

1456. Curculionites striatus. (Curculionidæ.)

Locality: Eichstadt, Bavaria. Horizon: Jura.

1888. Oppenheim. Palaeontogr., xxxiv: 241 (striata). *Pl.* 31, *fig.* 27.

1457. Curculionites syrichthus. (Curculionidæ.)

Locality: Durdlestone Bay, England. Horizon: Lower Purbecks.

1856. Giebel. Insect. d. vorwelt, 147.
See also Curculium syrichthus.

1458. Curculionites tuberculatus. (Curculionidæ).

Locality: Durdlestone Bay, England. Horizon: Lower Purbecks.

1854. Westwood. Quart. journ. geol. soc. Lond., x: 395 (unnamed). *Pl.* 16, *fig.* 33.
1856. Giebel. Insect. d. vorwelt, 148.

1459. Curculionites westwoodi. (Curculionidæ.)

Locality: Durdlestone Bay, England. Horizon: Lower Purbecks.

1854. Westwood. Quart. journ. geol. soc. Lond., x: 395 (unnamed). *Pl.* 16, *fig.* 12.
1856. Giebel. Insect. d. vorwelt, 147.

1460. Curculium syrichthus. (Curculionidæ.)

Locality: Durdlestone Bay, England. Horizon: Lower Purbecks.

1854. Westwood. Quart. journ. geol. soc. Lond., x: 387, 393. *Pl.* 14, *fig.* 3.
See also Curculionites syrichthus.

1461. Cycloderma deplanatum. (Trogositidæ.)

Locality: Schambelen, Switzerland. Horizon: Lias.

1865. Heer. Urwelt der Schweiz, 89. *Pl.* 8, *fig.* 4.
1872. " Monde prim. Suisse, 108. *Pl.* 8, *fig.* 4.
1876. " Prim. world Switz., i: 88. *Pl.* 8, *fig.* 4.
1879. " Urwelt der Schweiz, 2e aufl., 99. *Pl.* 8, *fig.* 4.
1885. Scudder. Zittel, Handb. palaeont., i, th. ii: 799. *Fig.* 1043.
1886. " Zittel-Barrois, Traité de paléont., ii: 799. *Fig.* 1060.

1462. Cymindis antiqua. (Carabidæ.)

Locality: Vale of Wardour, England. Horizon: Purbecks.

1854. Brodie. Foss. ins. sec. rocks Engl., 117 (unnamed). *Pl.* 6, *fig.* 10.
1856. Giebel. Insect. d. vorwelt, 69.

1463. Cymindis beyrichi. (Carabidæ.)

Locality: Durdlestone Bay, England. Horizon: Lower Purbecks.

1854. Westwood. Quart. journ. geol. soc. Lond., x: 395 (unnamed). *Pl.* 16, *fig.* 16.
1856. Giebel. Insect. d. vorwelt, 68–69.

1464. Cyphon ———. (Dascyllidæ.)

Locality: Vale of Wardour, England. Horizon: Purbecks.

1845. Brodie. Foss. ins. sec. rocks Engl., 32 (Westw., 116). *Pl.* 3, *fig.* 3.
See also Cyphon vetustus.

1465. Cyphon vetustus. (Dascyllidæ.)

Localities: Vale of Wardour, England; Dobbertin, Germany. Horizon: Lias.

1856. Giebel. Insect. d. vorwelt, 100.
1884. E. Geinitz. Zeitschr. deutsch. geol. gesellsch., 1884: 583.
1885. Scudder. Zittel, Handb. palaeont., i, th. ii: 798. *Fig.* 1038.
1886. " Zittel-Barrois, Traité de paléont., ii: 798. *Fig.* 1056.
See also Cyphon ——— Brodie.

1466. Diaperidium mithrax. (Tenebrionidæ.)

Locality: Durdlestone Bay, England. **Horizon:** Middle Purbecks.

1854.	**Westwood.**	Quart. journ. geol. soc. Lond., x: 383, 394. *Pl.* 15, *fig.* 8, right-hand fig.

1467. Ditomoptera dubia.

Locality: Solenhofen, Bavaria. **Horizon:** Jura.

1839.	**Germar.**	Verhandl. leop.-carol. akad. naturf., xix: 203–205 (Hemipt.). *Pl.* 22, *fig.* 5.
1852.	**Giebel.**	Deutschl. petref., 636.
1862.	**Hagen.**	Palaeontogr., x: 110 (Coleoptera).
1869.	**Weyenbergh.**	Tijdschr. v. ent., (2), iv: 233 [133].
1877.	**Assmann.**	Ber. versamml. deutsch. naturf., l: 192 (Coleopt.).
1888.	**Oppenheim.**	Palaeontogr., xxxiv: 240. *Pl.* 31, *fig.* 8.

See also Cerambycites dubius.

1468. Dytiscus ——. (Dytiscidæ).

Locality: Dorset, England. **Horizon:** Middle Purbecks.

1854.	**Westwood.**	Quart. journ. geol. soc. Lond., x: 282 (unnamed). *Pl.* 15, *fig.* 13.
1856.	**Giebel.**	Insect. d. vorwelt, 58.

1469. Dytiscus lentissimus. (Dysticidæ.)

Locality: Solenhofen, Bavaria. **Horizon:** Jura.

1874.	**Weyenbergh.**	Periód. zool., i: 101 (undescribed).
1874.	"	Énum. syst. faune ent. mésoz., 15 (undescribed).

Elater or Buprestis ——. See Buprestis (or Elater) —— Brodie.

1470. Elater angulatus. (Elateridæ.)

Localities: Wainlode, Apperley, Brockeridge, Churchdown, Aust, England.
Horizon: Lower Lias.

1845.	**Brodie.**	Foss. ins. sec. rocks Engl. (unnamed). *Pl.* 6, *fig.* 25.
1856.	**Giebel.**	Insect. d. vorwelt, 92.

1471. Elater costeri. (Elateridæ.)

Locality: Solenhofen, Bavaria. **Horizon:** Jura.

1869.	**Weyenbergh.**	Arch. mus. Teyl., ii: 284–285. *Pl.* 37, *fig.* 43.
1869.	"	Ins. foss. calc. lithogr., 38–39. *Pl.* 4, *fig.* 43.
1869.	"	Tijdschr. v. ent., (2), iv: 232 [132].
1874.	"	Periód. zool., i: 104.
1874.	"	Énum. syst. faune ent. mésoz., 18.

1472. Elater grossus. (Elateridæ.)

Locality: Solenhofen, Bavaria. **Horizon:** Jura.

1869.	**Weyenbergh.**	Arch. mus. Teyl., ii: 285. *Pl.* 37, *fig.* 42.
1869.	"	Ins. foss. calc. lithogr., 39. *Pl.* 4, *fig.* 42.
1869.	"	Tijdschr. v. ent., (2), iv: 232 [132].
1874.	"	Periód. zool., i: 104.
1874.	"	Énum. syst. faune ent. mésoz., 18.

1473. Elater morrisi. (Elateridæ.)

Locality: Durdlestone Bay, England. **Horizon:** Lower Purbecks.

1854.	**Westwood.**	Quart. journ. geol. soc. Lond., x: 395 (unnamed). *Pl.* 16, *fig.* 36.
1856.	**Giebel.**	Insect. d. vorwelt, 93.

1457. Curculionites syrichthus. (Curculionidæ.)

Locality: Durdlestone Bay, England. Horizon: Lower Purbecks.

1856. Giebel. Insect. d. vorwelt, 147.
See also Curculium syrichthus.

1458. Curculionites tuberculatus. (Curculionidæ).

Locality: Durdlestone Bay, England. Horizon: Lower Purbecks.

1854. Westwood. Quart. journ. geol. soc. Lond., x: 395 (unnamed). *Pl.* 16, *fig.* 33.
1856. Giebel. Insect. d. vorwelt, 148.

1459. Curculionites westwoodi. (Curculionidæ.)

Locality: Durdlestone Bay, England. Horizon: Lower Purbecks.

1854. Westwood. Quart. journ. geol. soc. Lond., x: 395 (unnamed). *Pl.* 16, *fig.* 12.
1856. Giebel. Insect. d. vorwelt, 147.

1460. Curculium syrichthus. (Curculionidæ.)

Locality: Durdlestone Bay, England. Horizon: Lower Purbecks.

1854. Westwood. Quart. journ. geol. soc. Lond., x: 387, 393. *Pl.* 14, *fig.* 3.
See also Curculionites syrichthus.

1461. Cycloderma deplanatum. (Trogositidæ.)

Locality: Schambelen, Switzerland. Horizon: Lias.

1865. Heer. Urwelt der Schweiz, 89. *Pl.* 8, *fig.* 4.
1872. " Monde prim. Suisse, 108. *Pl.* 8, *fig.* 4.
1876. " Prim. world Switz., i: 88. *Pl.* 8, *fig.* 4.
1879. " Urwelt der Schweiz, 2ᵉ aufl., 99. *Pl.* 8, *fig.* 4.
1885. Scudder. Zittel, Handb. palaeont., i, th. ii: 799. *Fig.* 1043.
1886. " Zittel-Barrois, Traité de paléont., ii: 799. *Fig.* 1060.

1462. Cymindis antiqua. (Carabidæ.)

Locality: Vale of Wardour, England. Horizon: Purbecks.

1854. Brodie. Foss. ins. sec. rocks Engl., 117 (unnamed). *Pl.* 6, *fig.* 10.
1856. Giebel. Insect. d. vorwelt, 69.

1463. Cymindis beyrichi. (Carabidæ.)

Locality: Durdlestone Bay, England. Horizon: Lower Purbecks.

1854. Westwood. Quart. journ. geol. soc. Lond., x: 395 (unnamed). *Pl.* 16, *fig.* 16.
1856. Giebel. Insect. d. vorwelt, 68–69.

1464. Cyphon ——. (Dascyllidæ.)

Locality: Vale of Wardour, England. Horizon: Purbecks.

1845. Brodie. Foss. ins. sec. rocks Engl., 32 (Westw., 116). *Pl.* 3, *fig.* 3.
See also Cyphon vetustus.

1465. Cyphon vetustus. (Dascyllidæ.)

Localities: Vale of Wardour, England; Dobbertin, Germany. Horizon: Lias.

1856. Giebel. Insect. d. vorwelt, 100.
1884. E. Geinitz. Zeitschr. deutsch. geol. gesellsch., 1884: 583.
1885. Scudder. Zittel, Handb. palaeont., i, th. ii: 798. *Fig.* 1038.
1886. " Zittel-Barrois, Traité de paléont., ii: 798. *Fig.* 1056.
See also Cyphon —— Brodie.

1466. Diaperidium mithrax. (Tenebrionidæ.)

Locality: Durdlestone Bay, England. **Horizon:** Middle Purbecks.

1854. **Westwood.** Quart. journ. geol. soc. Lond., x: 383, 394. *Pl.* 15, *fig.* 8, right-hand fig.

1467. Ditomoptera dubia.

Locality: Solenhofen, Bavaria. **Horizon:** Jura.

1839. **Germar.** Verhandl. leop.-carol. akad. naturf., xix: 203–205 (Hemipt.). *Pl.* 22, *fig.* 5.
1852. **Giebel.** Deutschl. petref., 636.
1862. **Hagen.** Palaeontogr., x: 110 (Coleoptera).
1869. **Weyenbergh.** Tijdschr. v. ent., (2), iv: 233 [133].
1877. **Assmann.** Ber. versamml. deutsch. naturf., l: 192 (Coleopt.).
1888. **Oppenheim.** Palaeontogr., xxxiv: 240. *Pl.* 31, *fig.* 8.

See also Cerambycites dubius.

1468. Dytiscus ——. (Dytiscidæ).

Locality: Dorset, England. **Horizon:** Middle Purbecks.

1854. **Westwood.** Quart. journ. geol. soc. Lond., x: 282 (unnamed). *Pl.* 15, *fig.* 13.
1856. **Giebel.** Insect. d. vorwelt, 58.

1469. Dytiscus lentissimus. (Dysticidæ.)

Locality: Solenhofen, Bavaria. **Horizon:** Jura.

1874. **Weyenbergh.** Periód. zool., i: 101 (undescribed).
1874. " Énum. syst. faune ent. mésoz., 15 (undescribed).

Elater or Buprestis ——. See Buprestis (or Elater) —— **Brodie.**

1470. Elater angulatus. (Elateridæ.)

Localities: Wainlode, Apperley, Brockeridge, Churchdown, Aust, England.
Horizon: Lower Lias.

1845. **Brodie.** Foss. ins. sec. rocks Engl. (unnamed). *Pl.* 6, *fig.* 25.
1856. **Giebel.** Insect. d. vorwelt, 92.

1471. Elater costeri. (Elateridæ.)

Locality: Solenhofen, Bavaria. **Horizon:** Jura.

1869. **Weyenbergh.** Arch. mus. Teyl., ii: 284–285. *Pl.* 37, *fig.* 43.
1869. " Ins. foss. calc. lithogr., 38–39. *Pl.* 4, *fig.* 43.
1869. " Tijdschr. v. ent., (2), iv: 232 [132].
1874. " Periód. zool., i: 104.
1874. " Énum. syst. faune ent. mésoz., 18.

1472. Elater grossus. (Elateridæ.)

Locality: Solenhofen, Bavaria. **Horizon:** Jura.

1869. **Weyenbergh.** Arch. mus. Teyl., ii: 285. *Pl.* 37, *fig.* 42.
1869. " Ins. foss. calc. lithogr., 39. *Pl.* 4, *fig.* 42.
1869. " Tijdschr. v. ent., (2), iv: 232 [132].
1874. " Periód. zool., i: 104.
1874. " Énum. syst. faune ent. mésoz., 18.

1473. Elater morrisi. (Elateridæ.)

Locality: Durdlestone Bay, England. **Horizon:** Lower Purbecks.

1854. **Westwood.** Quart. journ. geol. soc. Lond., x: 395 (unnamed). *Pl.* 16, *fig.* 36.
1856. **Giebel.** Insect. d. vorwelt, 93.

1474. Elater neptuni. (Elateridæ).

Locality: England. Horizon: Lower Lias.

1845.	Brodie.	Foss. ins. sec. rocks Engl. (unnamed). *Pl.* 7, *fig.* 3.
1856.	Giebel.	Insect. d. vorwelt, 91.

1475. Elater oweni. (Elateridæ.)

Locality: Durdlestone Bay, England. Horizon: Lower Purbecks.

1854.	Westwood.	Quart. journ. geol. soc. Lond., x: 395 (unnamed). *Pl.* 16, *fig.* 37.
1856.	Giebel.	Insect. d. vorwelt, 93.

1476. Elater purbeccensis. (Elateridæ.)

Locality: Vale of Wardour, England. Horizon: Purbecks.

1845.	Brodie.	Foss. ins. sec. rocks Engl. 32 (unnamed). *Pl.* 6, *fig.* 6.
1856.	Giebel.	Insect. d. vorwelt, 92.

1477. Elater redtenbacheri. (Elateridæ.)

Localities: Wainlode, Apperley, Brockeridge, Churchdown, Aust, England.
Horizon: Lower Lias.

1845.	Brodie.	Foss. ins. sec. rocks Engl. (unnamed). *Pl.* 6, *fig.* 26.
1856.	Giebel.	Insect. d. vorwelt, 92.

1478. Elater socius. (Elateridæ.)

Locality: Apperley, England. Horizon: Lower Lias.

1845.	Brodie.	Foss. ins. sec. rocks Engl., 101 (unnamed). *Pl.* 7, *fig.* 2.
1856.	Giebel.	Insect. d. vorwelt, 91.

1479. Elater teyleri. (Elateridæ.)

Locality: Solenhofen, Bavaria. Horizon: Jura.

1869.	Weyenbergh.	Arch. mus. Teyl., ii: 284. *Pl.* 37, *figs.* 44, 44*a*.
1869.	"	Ins. foss. calc. lithogr., 38. *Pl.* 4, *figs.* 44, 44*a*.
1869.	"	Tijdschr. v. ent., (2), iv: 232 [132].
1874.	"	Périod. zool., i: 103.
1874.	"	Énum. syst. faune ent. mésoz., 17.

1480. Elater vanus. (Elateridæ.)

Localities: Wainlode, Apperley, Brockeridge, Churchdown, Aust, England.
Horizon: Lower Lias.

1845.	Brodie.	Foss. ins. sec. rocks Engl. (unnamed). *Pl.* 6, *fig.* 23.
1856.	Giebel.	Insect. d. vorwelt, 92.

1481. Elater vetustus. (Elateridæ.)

Locality: England. Horizon: Lower Lias, Insect Limestone.

1845.	Brodie.	Foss. ins. sec. rocks Engl., 101. *Pl.* 7, *fig.* 1.
1856.	Giebel.	Insect. d. vorwelt, 91.
1871.	Phillips.	Geology of Oxford, 123.

See also Elaterites vetustus.

1482. Elater werneri. (Elateridæ.)

Locality: Vale of Aylesbury, England. Horizon: Purbecks.

1845.	Brodie.	Foss. ins. sec. rocks Engl., 32 (unnamed). *Pl.* 6, *fig.* 7.
1856.	Giebel.	Insect. d. vorwelt, 92.

1483. **Elaterites priscus.** (Elateridæ.)

Locality: Eichstadt, Bavaria. Horizon: Jura.

1888.	Oppenheim.	Palaeontogr., xxxiv: 241. *Pl.* 31, *fig.* 5.

1484. **Elaterites robustus.** (Elateridæ.)

Locality: Eichstadt, Bavaria. Horizon: Jura.

1888.	Oppenheim.	Palaeontogr., xxxiv: 241. *Pl.* 31, *fig.* 22.

1485. **Elaterites sibiricus.** (Elateridæ.)

Locality: Tapka near Irkutsk, Siberia. Horizon: Jura.

1876.	Heer.	Mém. acad. sc. St.-Pétersb., xxii, No. 12: 41. *Pl.* 22, *figs.* 9*e*, 9*ee*.
1877.	"	Flora foss. arct., 4, ii: 41. *Pl.* 22, *figs.* 9*e*, 9*ee*.

1486. **Elaterites vetustus.** (Elateridæ.)

Compared with Ampedus sanguineus Fabr.

Localities: Schambelen, Switzerland; Dobbertin, Germany. Horizon: Lias.

1865.	Heer.	Urwelt der Schweiz, 88, 95. *Pl.* 7, *fig.* 21.
1872.	"	Monde prim. Suisse, 108, 116. *Pl.* 7, *fig.* 21.
1876.	"	Prim. world Switz., i: 88, 94. *Pl.* 7, *fig.* 21.
1879.	"	Urwelt der Schweiz, 2^e aufl., 98, 105. *Pl.* 7, *fig.* 21.
1880.	E. Geinitz.	Zeitschr. deutsch. geol. gesellsch., 1880: 530 (cfr.). *Pl.* 22, *fig.* 19.
1884.	"	Zeitschr. deutsch. geol. gesellsch., 1884: 583.

See also Elater vetustus.

1487. **Elaterium barypus.** (Elateridæ.)

Locality: Durdlestone Bay, England. Horizon: Lower Purbecks.

1854.	Westwood.	Quart. journ. geol. soc. Lond., x: 389, 394–395. *Pl.* 16, *fig.* 5.
1856.	Giebel.	Insect. d. vorwelt, 93.

1488. **Elaterium pronæus.** (Elateridæ.)

Locality: Durdlestone Bay, England. Horizon: Lower Purbecks.

1854.	Westwood.	Quart. journ. geol. soc. Lond., x: 387, 393. *Pl.* 14, *fig.* 1.
1856.	Giebel.	Insect. d. vorwelt, 92–93.

1489. **Elaterium triopas.** (Elateridæ.)

Locality: Durdlestone Bay, England. Horizon: Lower Purbecks.

1854.	Westwood.	Quart. journ. geol. soc. Lond., x: 389, 394–395. *Pl.* 16, *fig.* 4.
1856.	Giebel.	Insect. d. vorwelt, 93.

1490. **Elateropsis infraliassica.** (Elateridæ.)

Locality: Krälah vic. Hildesheim, Germany. Horizon: Rhætic.

1876.	Roemer.	Zeitschr. deutsch. geol. gesellsch., xxviii: 351. *Figs.* 1, 1*a*.
1885.	Scudder.	Zittel, Handb. palaeont., i, th. ii: 797. *Fig.* 1036.
1886.	"	Zittel-Barrois, Traité de paléont., ii: 798. *Fig.* 1054.

1491. **Elmis brodiei.** (Parnidæ.)

Locality: Vale of Wardour, England. Horizon: Purbecks.

1856.	Giebel.	Insect. d. vorwelt, 50.

See also Limnius ——— Brodie.

1492. Elytridium angelini.

Locality: Kulla Gunnarstorp, Sweden. Horizon: Rhætic.

1878. Heer. Förhandl. geol. fören. Stockh., iv: 196. *Pl.* 13, *figs.* 5, 5*b*.

1493. Elytridium lævigatum.

Locality: Höganäs, Sweden. Horizon: Rhætic.

1878. Heer. Förhandl. geol. fören. Stockh., iv: 196. *Pl.* 13, *figs.* 6, 6*b*.

1494. Elytridium multipunctatum.

Locality: Ivnanguit, Greenland. Horizon: Komeschichten, Cretaceous.

1883. Heer. Flora foss. grönl., ii: 143–144. *Pl.* 109, *fig.* 5.

1495. Euchroma liasina. (Buprestidæ.)

Compared with E. gigantea.

Locality: Schambelen, Aargau, Switzerland. Horizon: Lias.

1852. Heer. Lias-insel Aargau, 13. *Pl.*, *figs.* 18, 19.
1854. Pictet. Traité de paléont., 2e ed., ii: 331. *Pl.* 40, *fig.* 3.
1856. Giebel. Insect. d. vorwelt, 498.
1865. Heer. Urwelt der Schweiz, 88. *Pl.* 7, *fig.* 10.
1872. " Monde prim. Suisse, 107. *Pl.* 7, *fig.* 10.
1876. " Prim. world Switz., i: 87. *Pl.* 7, *fig.* 10.
1879. " Urwelt der Schweiz, 2e aufl., 98. *Pl.* 7, *fig.* 10.

1496. Eumolpites liberatus. (Chrysomelidæ.)

Locality: Schambelen, Switzerland. Horizon: Lias.

1865. Heer. Urwelt der Schweiz, 89. *Pl.* 8, *fig.* 14.
1872. " Monde prim. Suisse, 109. *Pl.* 8, *fig.* 14.
1876. " Prim. world Switz., i: 89. *Pl.* 8, *fig.* 14.
1879. " Urwelt der Schweiz, 2e aufl., 99. *Pl.* 8, *fig.* 14.

1497. Eurythyrea grandis. (Buprestidæ.)

Compared with E. longipennis Heer (Tert.).

Locality: Eichstadt, Bavaria. Horizon: Jura.

1886. Deichmüller. Ins. lithogr. schiefer dresd. mus., 70. *Pl.* 5, *fig.* 14.
1888. Oppenheim. Palaeontogr., xxxiv: 240. *Pl.* 31, *fig.* 9.

1498. Feronites velenovskyi. (Carabidæ.)

Locality: Peruckých, Bohemia. Horizon: (Cretaceous?)

1884. Frič. Vesmír, xiii: 205–206. *Fig.* 8.

1499. Galerucites carinatus. (Chrysomelidæ.)

Locality: Kelheim, Bavaria. Horizon: Jura.

1888. Oppenheim. Palaeontogr., xxxiv: 242 (carinata). *Pl.* 31, *fig.* 26.

1500. Geotrupes lithographicus. (Scarabæidæ.)

Compared with G. mutator.

Locality: Eichstadt, Bavaria. Horizon: Jura.

1886. Deichmüller. Ins. lithogr. schiefer dresd. mus., 69. *Pl.* 5, *fig.* 13.

1501. Glaphyroptera brevicollis. (Buprestidæ.)

Locality: Schambelen, Switzerland. **Horizon:** Lias.

1865.	Heer.	Urwelt der Schweiz, 88. *Pl.* 7, *fig.* 15.
1872.	“	Monde prim. Suisse, 107. *Pl.* 7, *fig.* 15.
1876.	“	Prim. world Switz., i: 87. *Pl.* 7, *fig.* 15.
1879.	“	Urwelt der Schweiz, 2e aufl., 98. *Pl.* 7, *fig.* 15.

1502. Glaphyroptera depressa. (Buprestidæ.)

Locality: Aargau, Switzerland. **Horizon:** Lias.

1852.	Heer.	Lias-insel Aargau, 14. *Pl.*, *figs.* 23–25*.
1856.	Giebel.	Insect. d. vorwelt, 498.

1503. Glaphyroptera gehreti. (Buprestidæ.)

Localities: Schambelen, Aargau, Switzerland; Dobbertin, Mecklenberg.
Horizon: Lias.

1852.	Heer.	Lias-insel Aargau, 14. *Pl.*, *figs.* 25*a*, 26–28.
1856.	Giebel.	Insect. d. vorwelt, 498.
1865.	Heer.	Urwelt der Schweiz, 88. *Pl.* 7, *fig.* 12.
1872.	“	Monde prim. Suisse, 107. *Pl.* 7, *fig.* 12.
1876.	“	Prim. world Switz., i: 87. *Pl.* 7, *fig.* 12.
1879.	“	Urwelt der Schweiz, 2e aufl., 98. *Pl.* 7, *fig.* 12.
1884.	E. Geinitz.	Zeitschr. deutsch. geol. gesellsch., 1884: 583.

1504. Glaphyroptera gracilis. (Buprestidæ.)

Locality: Schambelen, Aargau, Switzerland. **Horizon:** Lias.

1852.	Heer.	Lias-insel Aargau, 14. *Pl.*, *figs.* 29–32.
1856.	Giebel.	Insect. d. vorwelt, 498.
1865.	Heer.	Urwelt der Schweiz, 95. *Pl.* 7, *fig.* 14.
1872.	“	Monde prim. Suisse, 116. *Pl.* 7, *fig.* 14.
1876.	“	Prim. world Switz., i: 94. *Pl.* 7, *fig.* 14.
1879.	“	Urwelt der Schweiz, 2e aufl., 105. *Pl.* 7, *fig.* 14.

1505. Glaphyroptera insignis. (Buprestidæ.)

Locality: Schambelen, Switzerland. **Horizon:** Lias.

1852.	Heer.	Lias-insel Aargau, 13–14. *Pl.*, *figs.* 20–22.
1856.	Giebel.	Insect. d. vorwelt, 498.
1865.	Heer.	Urwelt der Schweiz, 88. *Pl.* 7, *fig.* 13.
1872.	“	Monde prim. Suisse, 107. *Pl.* 7, *fig.* 13.
1876.	“	Prim. world Switz., i: 87. *Pl.* 7, *fig.* 13.
1879.	“	Urwelt der Schweiz, 2e aufl., 98. *Pl.* 7, *fig.* 13.

1506. Glaphyroptera pterophylli. (Buprestidæ.)

Locality: Vadutz, Liechtenstein. **Horizon:** Keuper, Trias.

1853.	Heer.	Esch., Geol. bemerk. (Neue denkschr. allg. schweiz. gesellsch. ges. naturw., xiii): 133–134. *Pl.* 7, *figs.* 11*a–c*, 12.
1853.	“	Beschr. angeführt. pflanz. u. ins., 19–20. *Pl.* 7, *figs.* 11*a–c*, 12.
1865.	“	Urwelt der Schweiz, 82.
1872.	“	Monde prim. Suisse, 99.
1876.	“	Prim. world Switz., 82.
1885.	Scudder.	Zittel, Handb. palaeont., i, th. ii: 796. *Fig.* 1033.
1886.	“	Zittel-Barrois, Traité de paléont., ii: 797. *Fig.* 1051.

See also Buprestites pterophylli.

1507. Glaphyroptera spectabilis. (Buprestidæ.)

Locality: Schambelen, Switzerland. Horizon: Lias.

1865.	Heer.	Urwelt der Schweiz, 88.
1872.	"	Monde prim. Suisse, 107.
1876.	"	Prim. world Switz., i: 87.
1879.	"	Urwelt der Schweiz, 2e aufl., 98.

1508. Gyrinites antiquus. (Gyrinidæ.)

Locality: Schambelen, Switzerland. Horizon: Lias.

1865.	Heer.	Urwelt der Schweiz, 91. *Pl.* 8, *fig.* 20.
1872.	"	Monde prim. Suisse, 110. *Pl.* 8, *fig.* 20.
1876.	"	Prim. world Switz., i: 90. *Pl.* 8, *fig.* 20.
1879.	"	Urwelt der Schweiz, 2e aufl., 101. *Pl.* 8, *fig.* 20.
1885.	Scudder.	Zittel, Handb. palaeont., i, th. ii: 802. *Fig.* 1065.
1886.	"	Zittel-Barrois, Traité de paléont., ii: 803. *Fig.* 1082.

1509. Gyrinites minimus. (Gyrinidæ.)

Localities: Schambelen, Switzerland; Dobbertin, Mecklenburg. Horizon: Lias.

1865.	Heer.	Urwelt der Schweiz, 91. *Pl.* 8, *fig.* 21.
1872.	"	Monde prim. Suisse, 110. *Pl.* 8, *fig.* 21.
1876.	"	Prim. world Switz., i: 90. *Pl.* 8, *fig.* 21.
1879.	"	Urwelt der Schweiz, 2e aufl., 101. *Pl.* 8, *fig.* 21.

See also Gyrinus minimus.

1510. Gyrinites troglodytes. (Gyrinidæ.)

Locality: Aargau, Switzerland. Horizon: Lias.

1852.	Heer.	Lias-insel Aargau, 12. *Pl.*, *figs.* 6–7.
1856.	Giebel.	Insect. d. vorwelt, 497.
1865.	Heer.	Urwelt der Schweiz, 91. *Pl.* 8, *fig.* 19.
1872.	"	Monde prim. Suisse, 110. *Pl.* 8, *fig.* 19.
1876.	"	Prim. world Switz., i: 90. *Pl.* 8, *fig.* 19.
1879.	"	Urwelt der Schweiz, 2e aufl., 101. *Pl.* 8, *fig.* 19.

See also Gyrinus troglodytes.

1511. Gyrinus ———. (Gyrinidæ.)

Locality: Norton, England. Horizon: Lower Lias.

1873.	Brodie.	Distr. corr. foss. ins., 16 ("like a foreign species").

1512. Gyrinus ———. (Gyrinidæ.)

Locality: England. Horizon: Lias.

1871.	Phillips.	Geology of Oxford, 123.

1513. Gyrinus antiquus. (Gyrinidæ.)

Locality: Schambelen, Switzerland. Horizon: Lias.

1865.	Heer.	Urwelt der Schweiz, 91. *Pl.* 8, *fig.* 20.
1872.	"	Monde prim. Suisse, 110. *Pl.* 8, *fig.* 20.
1876.	"	Prim. world Switz., i: 90. *Pl.* 8, *fig.* 20.
1879.	"	Urwelt der Schweiz, 2e aufl., 101. *Pl.* 8, *fig.* 20.

1514. Gyrinus atavus. (Gyrinidæ.)

Locality: Schambelen, Switzerland. Horizon: Lias.

1865.	Heer.	Urwelt der Schweiz, 64, 90. *Pl.* 8, *fig.* 18.
1872.	"	Monde prim. Suisse, 78, 110. *Pl.* 8, *fig.* 18.
1876.	"	Prim. world Switz., i: 64, 90. *Pl.* 8, *fig.* 18.
1879.	"	Urwelt der Schweiz, 2e aufl., 73, 100. *Pl.* 8, *fig.* 18.

1515. **Gyrinus dubius.** (Gyrinidæ.)

Locality: England. Horizon: Lower Lias.

1845. Brodie. Foss. ins. sec. rocks Engl. (unnamed). *Pl.* 7, *fig.* 6.
1856. Giebel. Insect. d. vorwelt, 56.

1516. **Gyrinus juranus.** (Gyrinidæ.)

Locality: Solenhofen, Bavaria. Horizon: Jura.

1869. Weyenbergh. Tijdschr. v. ent., (2), iv: 231 [131].
See also G. jurassicus.

1517. **Gyrinus jurassicus.** (Gyrinidæ.)

Locality: Solenhofen, Bavaria. Horizon: Jura.

1869. Weyenbergh. Arch. mus. Teyl., ii: 280. *Pl.* 37, *figs.* 53, 53*a*.
1869. " Ins. foss. calc. lithogr., 34. *Pl.* 4, *figs.* 53, 53*a*.
1874. " Périód. zool., i: 102.
1874. " Énum. syst. faune ent. mésoz., 16.
See also G. juranus.

1518. **Gyrinus minimus.** (Gyrinidæ.)

Locality: Dobbertin, Mecklenburg. Horizon: Lias.

1884. E. Geinitz. Zeitschr. deutsch. geol. gesellsch., 1884: 583.
See also Gyrinites minimus.

1519. **Gyrinus natans.** (Gyrinidæ.)

Locality: Forthampton, England. Horizon: Lower Lias.

1845. Brodie. Foss. ins. sec. rocks Engl., 101, 123. *Pl.* 7, *fig.* 5.
1856. Giebel. Insect. d. vorwelt, 56.

1520. **Gyrinus troglodytes.** (Gyrinidæ.)

Locality: Schambelen, Switzerland. Horizon: Lias.

1865. Heer. Urwelt der Schweiz, 64.
1872. " Monde prim. Suisse, 78.
1876. " Prim. world Switz., i: 64.
1879. " Urwelt der Schweiz, 2ᵉ aufl., 73.
See also Gyrinites troglodytes.

1521. **Haltica ? ———.** (Chrysomelidæ.)

Locality: Durdlestone Bay, England. Horizon: Lower Purbecks.

1854. Westwood. Quart. journ. geol. soc. Lond., x: 389, 396. *Pl.* 18, *fig.* 12.

1522. **Harpalidium anactus.** (Carabidæ.)

Locality: Durdlestone Bay, England. Horizon: Lower Purbecks.

1854. Westwood. Quart. journ. geol. soc. Lond., x: 386, 393. *Pl.* 14, *fig.* 20.
See also Harpalus anactus.

1523. **Harpalidium nothrus.** (Carabidæ.)

Locality: Durdlestone Bay, England. Horizon: Lower Purbecks.

1854. Westwood. Quart. journ. geol. soc. Lond., x: 386, 395. *Pl.* 17, *fig.* 3.
1856. Giebel. Insect. d. vorwelt, 63.

1524. Harpalus ——. (Carabidæ.)

Locality: Durdlestone Bay, England. Horizon: Lower Purbecks.

1854. Westwood. Quart. journ. geol. soc. Lond., x: 393 (unnamed). *Pl.* 14, *fig.* 16.
1856. Giebel. Insect. d. vorwelt, 64.

1525. Harpalus anactus. (Carabidæ.)

Locality: Durdlestone Bay, England. Horizon: Lower Purbecks.

1856. Giebel. Insect. d. vorwelt, 63.
See also Harpalidium anactus.

1526. Harpalus burmeisteri. (Carabidæ.)

Locality: Durdlestone Bay, England. Horizon: Lower Purbecks.

1854. Westwood. Quart. journ. geol. soc. Lond., x: 385 (unnamed). *Pl.* 24, *fig.* 14.
1856. Giebel. Insect. d. vorwelt, 63.

1527. Harpalus ewaldi. (Carabidæ.)

Locality: Durdlestone Bay, England. Horizon: Lower Purbecks.

1854. Westwood. Quart. journ. geol. soc. Lond., x: 393 (unnamed). *Pl.* 16, *fig.* 21.
1856. Giebel. Insect. d. vorwelt, 62.

1528. Harpalus heeri. (Carabidæ.)

Locality: Hasfield, England. Horizon: Lias.

1845. Brodie. Foss. ins. sec. rocks Engl. (unnamed). *Pl.* 6, *fig.* 27.
1856. Giebel. Insect. d. vorwelt, 63.

1529. Harpalus knorri. (Carabidæ.)

Locality: Durdlestone Bay, England. Horizon: Lower Purbecks.

1854. Westwood. Quart. journ. geol. soc. Lond., x: 395 (unnamed). *Pl.* 16, *fig.* 20.
1856. Giebel. Insect. d. vorwelt, 62.

1530. Harpalus liasinus. (Carabidæ.)

Locality: Aust, England. Horizon: Lias.

1845. Brodie. Foss. ins. sec. rocks Engl. (unnamed). *Pl.* 9, *fig.* 11.
1856. Giebel. Insect. d. vorwelt, 62.

1531. Harpalus schlotheimi. (Carabidæ.)

Localities: Apperley, Brockeridge, England. Horizon: Lias.

1845. Brodie. Foss. ins. sec. rocks Engl. (unnamed). *Pl.* 6, *fig.* 28; *Pl.* 10, *fig.* 2.
1856. Giebel. Insect. d. vorwelt, 63.

1532. Helophorus ——. (Hydrophilidæ.)

Locality: Vale of Wardour, England. Horizon: Purbecks.

1845. Brodie. Foss. ins. sec. rocks Engl., 32. *Pl.* 3, *fig.* 2.
1845. Westwood. Brodie, foss. ins. sec. rocks Eng., 116. *Pl.* 3, *fig.* 2.
See also H. brodiei.

1533. Helophorus antiquus. (Hydrophilidæ.)

Locality: Vale of Wardour, England. Horizon: Purbecks.

1845. Brodie. Foss. ins. sec. rocks Engl., 32 (unnamed). *Pl.* 6, *fig.* 13.
1856. Giebel. Insect. d. vorwelt, 51.

1534. Helophorus brodiei. (Hydrophilidæ.)

Locality: Vale of Wardour, England. Horizon: Purbecks.

1856.	Giebel.	Insect. d. vorwelt, 51.

See also Helophorus ——— Brodie.

1535. Helopides hildesiensis. (Tenebrionidæ.)

Locality: Krälah bei Hildesheim, Germany. Horizon: Rhaetic.

1876.	Roemer.	Zeitschr. deutsch. geol. gesellsch., xxviii: 351–352. *Figs.* 2, 2*a*.

1536. Helopium agabus. (Tenebrionidæ.)

Locality: Durdlestone Bay, England. Horizon: Lower Purbecks.

1854.	Westwood.	Quart. journ. geol. soc. Lond., x: 387, 393. *Pl.* 14, *fig.* 2.
1856.	Giebel.	Insect. d. vorwelt, 111.

Helopium ncoridas. See Helopium neoridas.

1537. Helopidium neoridas. (Tenebrionidæ.)

Locality: Durdlestone Bay, England. Horizon: Lower Purbecks.

1854.	Westwood.	Quart. journ. geol. soc. Lond., x: 389–390, 395 (ncoridas). *Pl.* 16, *fig.* 13.
1885.	Scudder.	Zitttel, Handb. palaeont., i, th. ii: 791. *Fig.* 1017.
1886.	"	Zittel-Barrois, Traité de paléont., ii: 792. *Fig.* 1035.

1538. Hister relictus. (Histeridæ.)

Locality: Solenhofen, Bavaria. Horizon: Jura.

1869.	Weyenbergh.	Arch. mus. Teyl., ii: 281. *Pl.* 37, *fig.* 50.
1869.	"	Ins. foss. calc. lithogr., 35. *Pl.* 4, *fig.* 50.
1869.	"	Tijdschr. v. ent., (2), iv: 232 [132].
1874.	"	Periód. zool., i: 102.
1874.	"	Énum. syst. faune ent. mésoz., 16.

1539. Hydrobiites veteranus. (Hydrophilidæ.)

Locality: Schambelen, Switzerland. Horizon: Lias.

1865.	Heer.	Urwelt der Schweiz, 91, 95. *Pl.* 8, *fig.* 23.
1872.	"	Monde prim. Suisse, 111, 116. *Pl.* 8, *fig.* 23.
1876.	"	Prim. world Switz., i: 90, 94. *Pl.* 8, *fig.* 23.
1879.	"	Urwelt der Schweiz, 2ᵉ aufl., 101, 105. *Pl.* 8, *fig.* 23.

See also Hydrobius veteranus.

1540. Hydrobius purbeccensis. (Hydrophilidæ.)

Locality: Vale of Wardour, England. Horizon: Purbecks.

1845.	Brodie.	Foss. ins. sec. rocks Engl., 32 (unnamed). *Pl.* 6, *fig.* 12.
1856.	Giebel.	Insect. d. vorwelt, 52.

1541. Hydrobius veteranus. (Hydrophilidæ.)

Locality: Aargau, Switzerland. Horizon: Lias.

1852.	Heer.	Lias-insel Aargau, 13. *Pl.*, *figs.* 15–16.
1856.	Giebel.	Insect. d. vorwelt, 498.

See also Hydrobiites veteranus.

1542. Hydrophilites acherontis. (Hydrophilidæ.)

Locality: Schambelen, Switzerland. Horizon: Lias.

1865. Heer. Urwelt der Schweiz, 91. *Pl.* 8, *fig.* 25.
1872. " Monde prim Suisse, 111. *Pl.* 8, *fig.* 25.
1876. " Prim. world Switz., i: 90. *Pl.* 8, *fig.* 25.
1879. " Urwelt der Schweiz, 2^e aufl., 101. *Pl.* 8, *fig.* 25.
See also Hydrophilus acherontis.

1543. Hydrophilites interpunctatus. (Hydrophilidæ.)

Locality: Schambelen, Switzerland. Horizon: Lias.

1865. Heer. Urwelt der Schweiz, 64.
1872. " Monde prim. Suisse, 78.
1876. " Prim. world Switz., i: 64.
1879. " Urwelt der Schweiz, 2^e aufl., 73.

1544. Hydrophilites nathorsti. (Hydrophilidæ.)

Locality: Bjuf, Sweden. Horizon: Rhaetic.

1878. Heer. Förhandl. geol. fören. Stockh., iv: 193–194. *Pl.* 13, *figs.* 1, 1*b*. 1*c*.

1545. Hydrophilites stygius. (Hydrophilidæ.)

Localities: Schambelen, Switzerland; Dobbertin, Mecklenburg. Horizon: Lias.

1865. Heer. Urwelt der Schweiz, 91. *Pl.* 8, *fig.* 24.
1872. " Monde prim. Suisse, 111. *Pl.* 8, *fig.* 24.
1876. " Prim. world Switz., i: 90. *Pl.* 8, *fig.* 24.
1879. " Urwelt der Schweiz, 2^e aufl., 101. *Pl.* 8, *fig.* 24.
1884. E. Geinitz. Zeitschr. deutsch. geol. gesellsch., 1884: 583.

1546. Hydrophilus ———. (Hydrophilidæ.)

Locality: England. Horizon: Lias.

1845. Brodie. Foss. ins. sec. rocks Engl., 124 (unnamed). *Pl.* 6, *fig.* 30.
1856. Giebel. Insect. d. vorwelt, 55.

1547. Hydrophilus ———. (Hydrophilidæ.)

Locality: Durdlestone Bay, England. Horizon: Middle Purbecks.

1854. Westwood. Quart. journ. geol. soc. Lond., x: 394 (unnamed). *Pl.* 15, *fig.* 13.
1856. Giebel. Insect. d. vorwelt, 55.

1548. Hydrophilus ———. (Hydrophilidæ.)

Locality: Durdlestone Bay, England. Horizon: Lower Purbecks.

1854. Westwood. Quart. journ. geol. soc. Lond., x: 394 (unnamed). *Pl.* 16, *fig.* 7.
1856. Giebel. Insect. d. vorwelt, 55.

1549. Hydrophilus acherontis. (Hydrophilidæ.)

Locality: Aargau, Switzerland. Horizon: Lias.

1852. Heer. Lias-insel Aargau, 12–13. *Pl.*, *figs.* 12–14.
1854. Pictet. Traité de paléont., 2^e éd., ii: 341. *Pl.* 40, *fig.* 4
1856. Giebel. Insect. d. vorwelt, 498.
See also Hydrophilites acherontis.

1550. Hydrophilus brodiei. (Hydrophilidæ.)

Locality: Vale of Wardour, England. Horizon: Purbecks.

1856. Giebel. Insect. d. vorwelt, 53.
See also Colymbetes ——— Brodie.

Hydrophilus deperditus. See II, HEMIPTERA, Idem.

1551. **Hydrophilus westwoodi.** (Hydrophilidæ.)

Locality: Vale of Wardour, England. Horizon: Purbecks.

1845.	Brodie.	Foss. ins. sec. rocks Engl., 32 (unnamed). *Pl.* 6, *fig.* 3.
1856.	Giebel.	Insect. d. vorwelt, 53.

1552. **Hydroporus neptuni.** (Dytiscidæ.)

Locality: Durdlestone Bay, England. Horizon: Lower Purbecks.

1854.	Westwood.	Quart. journ. geol. soc. Lond., x: 395 (unnamed). *Pl.* 16, *fig.* 28.
1856.	Giebel.	Insect. d. vorwelt, 58.

1553. **Hydroporus petrefactus.** (Dytiscidæ.)

Locality: Solenhofen, Bavaria. Horizon: Jura.

1869.	Weyenbergh.	Arch. mus. Teyl., ii: 279–280. *Pl.* 37, *fig.* 54.
1869.	"	Ins. foss. calc. lithogr., 33–34. *Pl.* 4, *fig.* 54.
1869.	"	Tijdschr. v. ent., (2), iv: 231 [131].
1874.	"	Periód. zool., i: 101.
1874.	"	Énum. syst. faune ent. mésoz., 15.

1554. **Hypera antiqua.** (Curculionidæ.)

Locality: Vale of Wardour, England. Horizon: Purbecks.

1845.	Brodie.	Foss. ins. sec. rocks Engl., 32 (unnamed). *Pl.* 6, *fig.* 4. (Giebel says *Pl.* 6, *fig.* 7; unquestionable mistake for *Pl.* 6, *fig.* 4.)
1856.	Giebel.	Insect. d. vorwelt, 140.

1555. **Laccophilus aquaticus.** (Dytiscidæ.)

Locality: Hasfield, England. Horizon: Lower Lias, Insect Limestone.

1845.	Brodie.	Foss. ins. sec. rocks Engl., 101, 124. *Pl.* 6, *fig.* 31.
1856.	Giebel.	Insect. d. vorwelt, 59.
1871.	Phillips.	Geology of Oxford, 123.

1556. **Lacon petrosum.** (Elateridæ.)

Locality: Solenhofen, Bavaria. Horizon: Jura.

1869.	Weyenbergh.	Arch. mus. Teyl., ii: 283–284. *Pl.* 37, *fig.* 45.
1869.	"	Ins. foss. calc. lithogr., 37–38. *Pl.* 4, *fig.* 45.
1869.	"	Tijdschr. v. ent., (2), iv: 232 [132].
1874.	"	Periód. zool., i: 103.
1874.	"	Énum. syst. faune ent. mésoz., 17.

1557. **Lamia schrœteri.** (Cerambycidæ.)

Locality: Durdlestone Bay, England. Horizon: Lower Purbecks.

1854.	Westwood.	Quart. journ. geol. soc. Lond., x: 395 (unnamed). *Pl.* 16, *fig.* 18.
1856.	Giebel.	Insect. d. vorwelt, 131.

1558. **Lamiites simillimus.** (Cerambycidæ.)

Locality: Vyšerovicích, Bohemia. Horizon: Cretaceous.

1888.	Fritsch.	Vesmír, xviii: 8. *Fig.* 5*A*.

1559. **Lathridiites schaumii.** (Lathridiidæ.)

Locality: Schambelen, Switzerland. Horizon: Lias.

1865.	Heer.	Urwelt der Schweiz, 89 (Latridiites). *Pl.* 8, *fig.* 1.
1872.	"	Monde prim. Suisse, 109 (Latridiites). *Pl.* 8, *fig.* 1.

1876.	Heer.	Prim. world Switz., i: 89 (Latridiites). *Pl.* 8, *fig.* 1.
1879.	"	Urwelt der Schweiz, 2^e aufl., 99 (Latridiites). *Pl.* 8, *fig.* 1.
1885.	Scudder.	Zittel, Handb. palaeont., i, th. ii: 799. *Fig.* 1042.
1886.	"	Zittel-Barrois, Traité de paléont., ii: 799. *Fig.* 1059.
1886.	"	Bull. U. S. geol. surv., No. 31: 78.

Latridiites schaumii. See Lathridiites schaumii.

1560. Leptura primigenia. (Cerambycidæ.)

Locality: Solenhofen, Bavaria. **Horizon**: **Jura.**

1869.	Weyenbergh.	Arch. mus. Teyl., ii: 286. *Pl.* 36, *fig.* 33.
1869.	"	Ins. foss. calc. lithogr., 40. *Pl.* 3, *fig.* 33.
1869.	"	Tijdschr. v. ent., (2), iv: 232 [132].
1874.	"	Periód. zool., i: 104.
1874.	"	Énum. syst. faune ent. mésoz., 18.

1561. Limnius ———. (Parnidæ.)

Locality: Vale of Wardour, England. **Horizon**: **Purbecks.**

1845.	Brodie.	Foss. ins. sec. rocks Engl., 32. *Pl.* 6, *fig.* 9.
1845.	Westwood.	Brodie, Foss. ins. sec. rocks Engl., 117. *Pl.* 6, *fig.* 9.

See also Elmis brodiei.

Megacentris tristis. See Megacentrus tristis.

1562. Megacentrus tristis. (Elateridæ.)

Locality: Schambelen, Aargau, Switzerland. **Horizon**: **Lias.**

1852.	Heer.	Lias-insel Aargau, 14–15. *Pl., figs* 37, 38.
1856.	Giebel.	Insect. d. vorwelt, 498 (Megacentris).
1865.	Heer.	Urwelt der Schweiz, 88. *Pl.* 7, *fig.* 22.
1872.	"	Monde prim. Suisse, 108. *Pl.* 7, *fig.* 22.
1876.	"	Prim. world Switz., i: 88. *Pl.* 7, *fig.* 22.
1879.	"	Urwelt der Schweiz, 2^e aufl., 98. *Pl.* 7, *fig.* 22.

1563. Melanophila (vic.) **———.** (Buprestidæ.)

Locality: Ust Balei, Siberia. **Horizon**: **Lias.**

1889.	Brauer-Redtenb.-Ganglb.	Mém. acad. sc. St.-Pétersb., (7), xxxvi, No. 15: 19. *Pl.* [2], *figs.* 25–27.

1564. Melanophila costata. (Buprestidæ.)

Compared with M. decostigma.

Locality: Schambelen, Switzerland. **Horizon**: **Lias.**

1865.	Heer.	Urwelt der Schweiz, 88. *Pl.* 7, *fig.* 19.
1872.	"	Monde prim. Suisse, 107. *Pl.* 7, *fig.* 19.
1876.	"	Prim. world Switz., i: 87. *Pl.* 7, *fig.* 19.
1879.	"	Urwelt der Schweiz, 2^e aufl., 98. *Pl.* 7, *fig.* 19.

1565. Melanophila sculptilis. (Buprestidæ.)

Locality: Schambelen, Aargau, Switzerland. **Horizon**: **Lias.**

1852.	Heer.	Lias-insel Aargau, 14. *Pl., figs.* 33–35.
1856.	Giebel.	Insect. d. vorwelt, 498.
1865.	Heer.	Urwelt der Schweiz, 88. *Pl.* 7, *fig.* 18.
1872.	"	Monde prim. Suisse, 107. *Pl.* 7, *fig.* 18.
1876.	"	Prim. world Switz., i: 87. *Pl.* 7, *fig.* 18.
1879.	"	Urwelt der Schweiz, 2^e aufl., 98. *Pl.* 7, *fig.* 18.

Meloe ———. See II. HEMIPTERA, Cicada ——— **Brodie.**

1566. **Meloe bavaricus.** (Meloidæ.)

Locality: Solenhofen, Bavaria. Horizon: **Jura.**

1874. Weyenbergh. Periód. zool., i: 86, 102. *Pl.* 3, *fig.* 6.
1874. " Énum. syst. faune ent. mésoz., 16.
1885. Scudder. Zittel, Handb. palaeont., i, th. ii: 790.
1886. " Zittel-Barrois, Traité de paléont., ii: 790.
1886. " Bull. U. S. geol. surv., No. 31: 69.

Meloe hoernesi. See II, NEUROPTERA, Idem.

1567. **Melolontha** ——. (Scarabæidæ.)

Locality: Aust Cliff, England. Horizon: Lias.

1845. Brodie. Foss. ins. sec. rocks Engl., 124-125 (unnamed). *Pl.* 9, *fig.* 7.
1856. Giebel. Insect. d. vorwelt, 32.

1568. **Melolontha** ——. (Scarabæidæ.)

Locality: Eyeford, England. Horizon: Stonesfield Slate.

1845. Murchison. Geol. Cheltenham, 68. *Pl.* 4, *fig.* 4.

1569. **Melolontha** ——. (Scarabæidæ.)

Locality: England. Horizon: Lias.

1871. Phillips. Geology of Oxford, 123.

1570. **Melolonthidium** ——. (Scarabæidæ.)

Localities: Eyeford, Stonesfield, England. Horizon: [Jura.]

1871. Phillips. Geology of Oxford, 173.

1571. **Mesosa germari.** (Cerambycidæ.)

Locality: Solenhofen, Bavaria. Horizon: Jura.

1856. Giebel. Insect. d. vorwelt, 129.
1869. Weyenbergh. Tijdschr. v. ent., (2), iv: 232 [132].
See also Cerambicinus dubius, etc.

1572. **Micranthaxia bella.** (Buprestidæ.)

Locality: Schambelen, Switzerland. Horizon: Lias.

1865. Heer. Urwelt der Schweiz, 88. *Pl.* 7, *fig.* 17.
1872. " Monde prim. Suisse, 107. *Pl.* 7, *fig.* 17.
1876. " Prim. world Switz., i: 88. *Pl.* 7, *fig.* 17.
1879. " Urwelt der Schweiz, 2e aufl., 98. *Pl.* 7, *fig.* 17.
1885. Scudder. Zittel, Handb. palaeont., i, th. ii: 797. *Fig.* 1034.
1886. " Zittel Barrois, Traité de paléont., ii: 797. *Fig.* 1052.

1573. **Micranthaxia rediviva.** (Buprestidæ.)

Locality: Schambelen, Aargau, Switzerland. Horizon: Lias.

1852. Heer. Lias-insel Aargau, 14. *Pl.*, *fig.* 36.
1856. Giebel. Insect. d. vorwelt, 498.
1865. Heer. Urwelt der Schweiz, 88. *Pl.* 7, *fig.* 16.
1872. " Monde prim. Suisse, 107. *Pl.* 7, *fig.* 16.
1876. " Prim. world Switz., i: 88. *Pl.* 7, *fig.* 16.
1879. " Urwelt der Schweiz, 2e aufl., 98. *Pl.* 7, *fig.* 16.

Mormolucoides articulatus. See II, NEUROPTERA, Idem.

1574. **Nitidulites argoviensis.** (Nitidulidæ.)

Localities: Schambelen, Switzerland; Dobbertin, Mecklenburg. Horizon: Lias.

1865.	Heer.	Urwelt der Schweiz, 90, 92. *Pl.* 8, *figs.* 2, 3.
1872.	"	Monde prim. Suisse, 110, 113. *Pl.* 8, *figs.* 2, 3.
1876.	"	Prim. world Switz., i: 89, 91. *Pl.* 8, *figs.* 2, 3.
1879.	"	Urwelt der Schweiz, 2^{e} aufl., 100. *Pl.* 8, *figs.* 2, 3.
1880.	E. Geinitz.	Zeitschr. deutsch. geol. gesellsch., 1880: 530 (cfr.). *Pl.* 22, *fig.* 20.
1884.	"	Zeitschr. deutsch. geol. gesellsch., 1884: 583.
1885.	Scudder.	Zittel, Handb. palaeont., i, th. ii: 799. *Fig.* 1044.
1886.	"	Zittel-Barrois, Traité de paléont., ii: 799. *Fig.* 1061.
1886.	"	Bull. U. S. geol. surv., No. 31: 78.

1575. **Oryctes pluto.** (Scarabæidæ.)

Locality: Solenhofen, Bavaria. Horizon: Jura.

1869.	Weyenbergh.	Arch. mus. Teyl., ii: 282. *Pl.* 37, *fig.* 49.
1869.	"	Ins. foss. calc. lithogr., 36. *Pl.* 4, *fig.* 49.
1869.	"	Tijdschr. v. ent., (2), iv: 232 [132].
1874.	"	Periód. zool., i: 102.
1874.	"	Énum. syst. faune ent. mésoz., 16.

1576. **Oryctites fossilis.** (Scarabæidæ.)

Locality: Eichstadt, Bavaria. Horizon: Jura.

1888.	Oppenheim.	Palaeontogr., xxxiv: 238–239. *Pl.* 31, *fig.* 2.

1577. **Otiorhynchites constans.** (Otiorhynchidæ.)

Locality: Mšeno bei Budin, Böhmen. Horizon: Cretaceous.

1882.	Fritsch.	Mojs., Beitr. palaeont. Oestr.-Ung., ii: 5. *Pl.* 2, *fig.* 2 (2 figs).
1882.	"	Foss. arthr. steink. u. kreidef. Böhmens, 5. *Pl.* 2, *fig.* 2 (2 figs).
1884.	"	Vesmír, xiii: 205–206. *Fig.* 2.

Palephemera mediaeva. See II, NEUROPTERA, Idem.

1578. **Petrorophus truncatus.** (Nitidulidæ.)

Locality: Schambelen, Aargau, Switzerland. Horizon: Lias.

1852.	Heer.	Lias-insel Aargau, 12. *Pl.*, *figs.* 8–9.
1856.	Giebel.	Insect. d. vorwelt, 497.
1865.	Heer.	Urwelt der Schweiz, 90. *Pl.* 8, *fig.* 12.
1872.	"	Monde prim. Suisse, 109–110. *Pl.* 8, *fig.* 12.
1876.	"	Prim. world Switz., i: 89. *Pl.* 8, *fig.* 12.
1879.	"	Urwelt der Schweiz, 2^{e} aufl., 100. *Pl.* 8, *fig.* 12.
1885.	Scudder.	Zittel, Handb. palaeont., i, th. ii: 799.
1886.	"	Zittel-Barrois, Traité de paléont., ii: 799.
1886.	"	Bull. U. S. geol. surv., No. 31: 78.

Philonthus kneri. See II, NEUROPTERA, Idem.

1579. **Pimelia wittsi.** (Tenebrionidæ.)

Locality: Sevenhampton, England. Horizon: Stonesfield Slate.

1856.	Giebel.	Insect. d. vorwelt, 108.

See also Coccinella wittsii.

1580. **Pimelia zekelii.** (Tenebrionidæ.)

Locality: Eyeford, England. Horizon: Stonesfield Slate.

1845.	Brodie.	Foss. ins. sec. rocks Engl., 48 (unnamed). *Pl.* 6, *fig.* 20.
1856.	Giebel.	Insect. d. vorwelt, 107–108.

1581. Prionidium ——. (Cerambycidæ.)

Locality: Stonesfield, England. **Horizon:** [Jura].

1871. Phillips. Geology of Oxford, 173.

1582. Prionus antiquus. (Cerambycidæ.)

Locality: Durdlestone Bay, England. **Horizon:** Lower Purbecks.

1854. Westwood. Quart. journ. geol. soc. Lond., x: 395 (unnamed). *Pl.* 16, *fig.* 19.
1856. Giebel. Insect. d. vorwelt, 126.

1583. Prionus bucklandi. (Cerambycidæ.)

Locality: England. **Horizon:** Stonesfield Slate.

1854. Morris. Catal. Brit. foss., 2d ed., 117.
See also Prionus ooliticus.

Prionus oolithicus. See Prionus ooliticus.

1584. Prionus ooliticus. (Cerambycidæ.)

Localities: Sevenhampton, Eyeford, England; Dobbertin, Mecklenburg.
Horizon: Stonesfield Slate.

1845. Brodie. Foss. ins. sec. rocks Engl., 47. *Pl.* 6, *fig.* 15.
1856. Giebel. Insect. d. vorwelt, 126 (oolithicus).
1884. E. Geinitz. Zeitschr. deutsch. geol. gesellsch., 1884: 583 (oolithicus).
1885. Scudder. Zittel, Handb. palaeont., i, th. ii: 793. *Fig.* 1021.
1886. " Zittel-Barrois, Traité de paléont., ii: 793. *Fig.* 1039.
See also P. bucklandi.

1585. Procarabus reticulatus. (Carabidæ.)

Locality: Eichstadt, Bavaria. **Horizon:** Jura.

1888. Oppenheim. Palaeontogr., xxxiv: 237. *Pl.* 31, *fig.* 28.

1586. Procarabus tripartitus. (Carabidæ.)

Locality: Eichstadt, Bavaria. **Horizon:** Jura.

1888. Oppenheim. Palaeontogr., xxxiv: 237. *Pl.* 31, *fig.* 12.

1587. Procarabus zitteli. (Carabidæ.)

Locality: Eichstadt, Bavaria. **Horizon:** Jura.

1888. Oppenheim. Palaeontogr., xxxiv: 236–237. *Pl.* 31, *fig.* 14.

1588. Prodytiscus eichstættensis. (Dytiscidæ.)

Locality: Eichstadt, Bavaria. **Horizon:** Jura.

1888. Oppenheim. Palaeontogr., xxxiv: 238. *Pl.* 31, *figs.* 19, 20.

1589. Prodytiscus longispinosus. (Dytiscidæ.)

Locality: Bavaria. **Horizon:** Jura.

1888. Oppenheim. Palaeontogr., xxxiv: 237–238. *Pl.* 31, *fig.* 15.
See also Pseudohydrophilus longispinosus; also II, ORTHOPTERA, Blabera avita, etc.

1590. Progeotrupes jurassicus. (Scarabæidæ.)

Locality: Eichstadt, Bavaria. **Horizon:** Jura.

1888. Oppenheim. Palaeontogr., xxxiv: 239. *Pl.* 31, *fig.* 17.

Prognatha crassa. See II, NEUROPTERA, Idem.

1591. Prototoma striata. (Mycetophagidæ.)

Locality: Aargau, Switzerland. Horizon: Lias

1852.	Heer.	Lias-insel Aargau, 12. *Pl.*, *fig.* 11.
1856.	Giebel.	Insect. d. vorwelt, 498.
1865.	Heer.	Urwelt der Schweiz. *Pl.* 8, *fig.* 7.
1872.	“	Monde prim. Suisse. *Pl.* 8, *fig.* 7.
1876.	“	Prim. world Switz. *Pl.* 8, *fig.* 7.
1879.	“	Urwelt der Schweitz, 2^{e} aufl. *Pl.* 8, *fig.* 7.
1885.	Scudder.	Zittel, Handb. palaeont., i, th. ii: 799. *Fig.* 1048.
1886.	“	Zittel-Barrois, Traité de paléont., ii: 800. *Fig.* 1065.

1592. Pseudohydrophilus longispinosus. (Dytiscidæ.)

Locality: Eichstadt, Bavaria. Horizon: Jura.

1886.	Deichmüller.	Ins. lith. schichten dresd. mus., 67–69. *Pl.* 5, *figs.* 10–12.

See also Prodytiscus longispinosus; also II, ORTHOPTERA, Blabera avita, etc.

1593. Pyrochroa brevipes. (Pyrochroidæ.)

Locality: Eichstadt, Bavaria. Horizon: Jura.

1886.	Deichmüller.	Ins. lith. schicten dresd. mus., 72–73. *Pl.* 5, *figs.* 17–18, 18*.

1594. Saperdides cristallosus. (Cerambycidæ.)

Locality: Solenhofen, Bavaria. Horizon: Jura.

1874.	Weyenbergh.	Periód. zool., i: 85–86, 104. *Pl.* 3, *fig.* 5.
1874.	“	Énum. syst. faune ent. mésoz., 18.

1595. Scaphidium hageni. (Scaphidiidæ.)

Locality: Solenhofen, Bavaria. Horizon: Jura.

1869.	Weyenbergh.	Arch. mus. Teyl., ii: 281. *Pl.* 37, *fig.* 51.
1869.	“	Ins. foss. calc. lithogr., 35. *Pl.* 4, *fig.* 51.
1869.	“	Tijdschr. v. ent., (2), iv: 232 [132].
1874.	“	Periód. zool., i: 102 (Scaphiduum).
1874.	“	Énum. syst. faune ent. mésoz., 16 (Scaphiduum).

Scaphiduum hageni. See Scaphidium hageni.

Scarabæites deperditus. See II, HEMIPTERA, Idem.

Scarabæus deperditus. See II, HEMIPTERA, Idem.

1595a. Silpha ——. (Silphidæ.)

Locality: Bohemia. Horizon: Cretaceous.

[1883.	Frič.	Arch. výsk. čech., díl. 1, odd. 2, str. 170.]

See also Silphites priscus, etc.

1596. Silpha tenuilythris. (Silphidæ.)

Locality: Solenhofen, Bavaria. Horizon: Jura.

1869.	Weyenbergh.	Arch. mus. Teyl., ii: 280–281. *Pl.* 37, *fig.* 48.
1869.	“	Ins. foss. calc. lithogr., 34–35. *Pl.* 4, *fig.* 48.
1869.	“	Tijdschr. v. ent., (2), iv: 232 [132], (orig. Silphate).
1869.	“	Tijdschr. v. ent., (2), iv: 232 [132], (emend. Silpha).
1874.	“	Periód. zool., i: 102.
1874.	“	Énum. syst. faune ent. mésoz., 16.

Silphate tenuilythris. See Silpha tenuilythris.

1597. Silphites angusticollis. (Silphidæ.)

Locality: Eichstadt, Bavaria. Horizon: Jura.

1888. Oppenheim. Palaeontogr., xxxiv: 239. *Pl.* 31, *fig.* 6.

1598. Silphites cetoniformis. (Silphidæ.)

Locality: Eichstadt, Bavaria. Horizon: Jura.

1888. Oppenheim. Palaeontogr., xxxiv: 239. *Pl.* 31, *fig.* 16.

1599. Silphites priscus. (Silphidæ.)

Locality: Kounic, Bohemia. Horizon: Perucer schichten, Cretaceous.

1882. Fritsch. Mojs., Beitr. palaeont. Oestr.-Ung., ii: 4–5. *Pl.* 2, *fig.* 1 (2 figs.).
1882. " Foss. arthr. steink. u. kreidef. Böhmens, 4–5. *Pl.* 2, *fig.* 1 (2 figs.).
1884. " Vesmír, xiii: 205–206. *Fig.* 1.
See also ——— ——— Frič, Silpha ——— Frič.

1600. Sitonites melanarius. (Curculionidæ.)

Locality: Schambelen, Switzerland. Horizon: Lias.

1865. Heer. Urwelt der Schweiz, 90. *Pl.* 8, *fig.* 16.
1872. " Monde prim. Suisse, 109. *Pl.* 8, *fig.* 16.
1876. " Prim. world Switz., i: 89. *Pl.* 8, *fig.* 16.
1879. " Urwelt der Schweiz, 2^e aufl., 100. *Pl.* 8, *fig.* 16.

1601. Sphenoptera sphinx. (Buprestidæ.)

Compared with S. karelini.

Locality: Eichstadt, Bavaria. Horizon: Jura.

1886. Deichmüller. Ins. lith. schichten dresd. mus., 70–72. *Pl.* 5, *figs.* 15–16.
See also Actea sphinx, Chrysobothris veterana.

1602. Strongylites lævigatus. (Nitidulidæ.)

Locality: Schambelen, Switzerland. Horizon: Lias.

1865. Heer. Urwelt der Schweiz, 89.
1872. " Monde prim. Suisse, 109.
1876. " Prim. world Switz., i: 88.
1879. " Urwelt der Schweiz, 2^e aufl., 99.

1603. Strongylites morio. (Nitidulidæ.)

Locality: Schambelen, Switzerland. Horizon: Lias.

1865. Heer. Urwelt der Schweiz, 89. *Pl.* 7, *fig.* 24.
1872. " Monde prim. Suisse, 109. *Pl.* 7, *fig.* 24.
1876. " Prim. world Switz., i: 88. *Pl.* 7, *fig.* 24.
1879. " Urwelt der Schweiz, 2^e aufl., 99. *Pl.* 7, *fig.* 24.

1604. Strongylites stygicus. (Nitidulidæ.)

Locality: Schambelen, Switzerland. Horizon: Lias.

1865. Heer. Urwelt der Schweiz, 89. *Pl.* 7, *fig.* 23.
1872. " Monde prim. Suisse, 109. *Pl.* 7, *fig.* 23.
1876. " Prim. world Switz., i: 88. *Pl.* 7, *fig.* 23.
1879. " Urwelt der Schweiz, 2^e aufl., 99. *Pl.* 7, *fig.* 23.

1605. **Telephorium abgarus.** (Lampyridæ.)

Locality: Durdlestone Bay, England. **Horizon:** Lower Purbecks.

1854.	Westwood.	Quart. journ. geol. soc. Lond., x: 386, 395. *Pl.* 17, *fig.* 4.
1856.	Giebel.	Insect. d. vorwelt, 102.
1885.	Scudder.	Zittel, Handb. palaeont., i, th. ii: 796.
1886.	"	Zittel-Barrois, Traité de paléont., ii: 796.
1886.	"	Bull. U. S. geol. surv., No. 31: 76.

1606. **Telephorus haueri.** (Lampyridæ.)

Locality: Forthampton, England. **Horizon:** Lower Lias.

1845.	Brodie.	Foss. ins. sec. rocks Engl., 101 (unnamed). *Pl.* 6, *fig.* 29.
1856.	Giebel.	Insect. d. vorwelt, 101.
1885.	Scudder.	Zittel, Handb. palaeont., i, th. ii: 796. *Fig.* 1031.
1886.	"	Zittel-Barrois, Traité de paléont., ii: 796. *Fig.* 1049.

1607. **Tenebrio innominatus.** (Tenebrionidæ.)

Locality: Solenhofen, Bavaria. **Horizon:** Jura.

1869.	Weyenbergh.	Arch. mus. Teyl., ii: 285. *Pl.* 37, *fig.* 41.
1869.	"	Ins. foss. calc. lithogr., 39. *Pl.* 4, *fig.* 41.
1869.	"	Tijdschr. v. ent., (2), iv: 232 [132].
1874.	"	Periód. zool., i: 104.
1874.	"	Énum. syst. faune ent. mésoz., 18.

1608. **Tenebrio rugosostriatus.** (Tenebrionidæ.)

Locality: Vale of Wardour, England. **Horizon:** Purbecks.

1845.	Brodie.	Foss. ins. sec. rocks Engl., 32 (unnamed). *Pl.* 6, *fig.* 2.
1856.	Giebel.	Insect. d. vorwelt, 109.

1609. **Tentyridium peleus.**

Locality: Durdlestone Bay, England. **Horizon:** Lower Purbecks.

1854.	Westwood.	Quart. journ. geol. soc. Lond., x: 393. *Pl.* 14, *fig.* 21.
1856.	Giebel.	Insect. d. vorwelt, 107.

1610. **Thurmannia punctulata.** (Carabidæ.)

Locality: Schambelen, Aargau, Switzerland. **Horizon:** Lias.

1852.	Heer.	Lias-insel Aargau, 11–12. *Pl.*, *figs.* 1, 2.
1856.	Giebel.	Insect. d. vorwelt, 497.
1865.	Heer.	Urwelt der Schweiz, 90. *Pl.* 8, *fig.* 17.
1872.	"	Monde prim. Suisse, 110. *Pl.* 8, *fig.* 17.
1876.	"	Prim. world Switz., i: 90. *Pl.* 8, *fig.* 17.
1879.	"	Urwelt der Schweiz, 2^e aufl., 100. *Pl.* 8, *fig.* 17.
1885.	Scudder.	Zittel, Handb. palaeont., i, th. ii: 803. *Fig.* 1068.
1886.	"	Zittel-Barrois, Traité de paléont., ii: 804. *Fig.* 1085.
1889.	Nicholson.	Man. palæont., 3d ed., i: 601. *Fig.* 449*b*.

1611. **Timarchopsis czckanowskii.** (Chrysomelidæ.)

Locality: Ust Balei, Siberia. **Horizon:** Lias.

1889.	Brauer-Redtenb.-Ganglb.	Mém. acad. sc. St.-Pétersb., (7), xxxvi, No. 15: 17–18. *Pl.* [2], *fig.* 22.

1612. Trixagites floralis. (Throscidæ.)

Locality: Schambelen, Switzerland. **Horizon**: Lias.

1865.	Heer.	Urwelt der Schweiz, 90. *Pl.* 8, *fig.* 8.
1872.	"	Monde prim. Suisse, 110. *Pl.* 8, *fig.* 8.
1876.	"	Prim. world Switz., i: 89. *Pl.* 8, *fig.* 8.
1879.	"	Urwelt der Schweiz, 2e aufl., 100. *Pl.* 8, *fig.* 8.
1885.	Scudder.	Zittel, Handb. palaeont., i, th. ii: 797.
1886.	"	Zittel-Barrois, Traité de paléont., ii: 797.
1886.	"	Bull. U. S. geol. surv., No. 31: 77.

Trogulus ———. See Trogus ———.

1613. Trogus ———. (Dytiscidæ.)

Locality: Strensham, England. **Horizon**: Lower Lias.

1873.	Brodie.	Distr. corr. foss. ins., 16 (Trogulus).

1614. Velenovskya inornata.

Locality: Bohemia. **Horizon**: Cretaceous.

1888.	Fritsch.	Vesmír, xviii: 8. *Fig.* 5*B*.

1615. Wollastonia ovalis. (Hydrophilidæ.)

Locality: Aargau, Switzerland. **Horizon**: Lias.

1852.	Heer.	Lias-insel Aargau, 13. *Pl.*, *fig.* 17.
1856.	Giebel.	Insect. d. vorwelt, 498.

See also Wollastonites ovalis.

1616. Wollastonites ovalis. (Hydrophilidæ.)

Locality: Schambelen, Switzerland. **Horizon**: Lias.

1865.	Heer.	Urwelt der Schweiz, 91. *Pl.* 8, *fig.* 26.
1872.	"	Monde prim. Suisse, 111. *Pl.* 8, *fig.* 26.
1876.	"	Prim. world Switz., i: 90. *Pl.* 8, *fig.* 26.
1879.	"	Urwelt der Schweiz, 2e aufl., 101. *Pl.* 8, *fig.* 26.
1885.	Scudder.	Zittel, Handb. palaeont., i, th. ii: 802. *Fig.* 1062.
1886.	"	Zittel-Barrois, Traité de paléont., ii: 803. *Fig.* 1079.

See also Wollastonia ovalis.

DIPTERA.

1617. ——— ———.

Locality: Govers Cliff End, England. **Horizon**: Wealden.

1854.	Binfield.	Quart. journ. geol. soc. Lond., x: 172.

——— ———. See II, HEMIPTERA, Tettigonia ——— Borre.

1618. ——— ———.

Locality: Dumbleton, England. **Horizon**: Upper Lias.

1873.	Brodie.	Distr. corr. foss. ins., 15.

1619. ——— ———.

Localities: Wainlode, Apperley, England. **Horizon**: Lower Lias.

1873.	Brodie.	Distr. corr. foss. ins., 17.

1620. —— ——.

Localities: Brown's Wood and Stooper's Wood, near Henley in Arden, England. Horizon: Lias.

1875. Brodie. Lower Lias Eatington, etc., 10.

1621. —— ——.

Locality: Copt Heath, near Knowle, England. Horizon: Lower Lias.

1875. Brodie. Lower Lias Eatington, etc., 10.

1622. —— —— (larva).

Locality: Vale of Wardour, England. Horizon: Purbecks.

1845. Westwood. Brodie, Foss. ins. sec. rocks Engl., 121. *Pl.* 4, *fig.* 1.

—— —— (Chironomidæ.) See Rhyphus priscus.

1623. —— ——. (Empidæ.)

Locality: Vale of Wardour, England. Horizon: Purbecks.

1845. Brodie. Foss. ins. sec. rocks Engl., 34 (Westwood, 121). *Pl.* 3, *fig.* 11.
See also Hasmona leo.

1624. —— —— (several sp.). (Tipulidæ.)

Locality: Vale of Wardour, England. Horizon: Purbecks.

1845. Brodie. Foss. ins. sec. rocks Engl., 34.

1625. —— ——. (Tipulidæ.)

Locality: Durdlestone Bay England. Horizon: Lower Purbecks.

1854. Westwood. Quart. journ. geol. soc. Lond., x: 386, 393. *Pl.* 15, *fig.* 1.

1626. —— ——. (Tipulidæ.)

Locality: Durdlestone Bay, England. Horizon: Lower Purbecks.

1854. Westwood. Quart. journ. geol. soc. Lond., x: 390, 396. *Pl.* 18, *fig.* 20.

1627. Adonia fittoni. (Mycetophilidæ.)

Locality: England. Horizon: Purbecks.

1856. Giebel. Insect. d. vorwelt, 239.
See also Platyura fittoni.

1628. Asilicus lithophilus. (Asilidæ.)

Localities: Kelheim, Solenhofen, Bavaria. Horizon: Jura.

1842. Germar. Münst., Beitr. z. petref., v: 87–88. *Pl.* 9, *fig.* 7.
1852. Giebel. Deutschl. petref., 642.
1854. Pictet. Traité de paléont., 2e éd., ii: 400. *Pl.* 40, *fig.* 9.
1856. Giebel. Insect. d. vorwelt, 211.
1862. Hagen. Palaeontogr., x: 111.
1869. Weyenbergh. Arch. mus. Teyl., ii: 255–256. *Pl.* 34, *fig.* 4.
1869. " Ins. foss. calc. lithogr., 9–10. *Pl.* 1, *fig.* 4.
1869. " Tijdschr. v. ent., (2), iv: 237.
1874. " Periód. zool., i: 89 (littophilus).
1874. " Énum. syst. faune ent. mésoz., 3 (littophilus).
1877. Assmann. Ber. versamml. deutsch. naturf., l: 192 (Orthopt. near Locusta amanda).

Asilicus littophilus. See Asilicus lithophilus.

1629. Asilus ignotus. (Asilidæ.)

Locality: Forthampton, England. Horizon: Insect Limestone, Lower Lias.

1845 Brodie. Foss. ins. sec. rocks Engl., 102, 128. *Pl.* 7, *fig.* 19.
1856 Giebel. Insect. d. vorwelt, 211.
1871. Phillips. Geology of Oxford, 123.

1630. Asuba brodiei. (Culicidæ.)

Locality: Vale of Wardour, England. Horizon: Purbecks.

1856 Giebel. Insect. d. vorwelt, 253.
See also Tanypus dubius.

1631. Bria prisca. (Rhyphidæ?)

Locality: Vale of Wardour, England. Horizon: Purbecks.

1856 Giebel. Insect. d. vorwelt, 226–227.
See also Rhyphus priscus.

1632. Campylomyza grandæva.

Locality: Durdlestone Bay, England. Horizon: Middle Purbecks.

1856 Giebel. Insect. d. vorwelt, 248.
See also Cecidomium grandævum.

1633. Cecidomium grandævum.

Locality: Durdlestone Bay, England. Horizon: Middle Purbecks.

1854. Westwood. Quart journ geol. soc. Lond., x: 384, 394. *Pl.* 15, *fig.* 21.
1885. Scudder. Zittel, Handb. palaeont., i, th. ii: 810.
1886. " Zittel-Barrois, Traité de paléont., ii: 811.
1886. " Bull. U. S. geol. surv., No. 31: 91.
See also Campylomyza grandæva.

Cheilosia dubia. See Chilosia dubia.

1634. Chenesia (or Macropeza) ———. (Chironomidæ?.)

Locality: Vale of Wardour, England. Horizon: Purbecks.

1845. Brodie. Foss. ins. sec. rocks Engl., 34, 121. *Pl.* 5, *fig.* 15.
See also Macropeza prisca, etc.

1635. Chilosia dubia. (Syrphidæ.)

Locality: Solenhofen, Bavaria. Horizon: Jura.

1869. Weyenbergh. Arch. mus. Teyl., ii: 259 (Cheilosia). *Pl.* 34, *fig.* 3.
1869. " Ins. foss. calc. lithogr., 13. *Pl.* 1, *fig.* 3.
1869. " Tijdschr. v. ent., (2), iv: 237.
1874. " Periód. zool., i: 90.
1874. " Énum. syst. faune ent. mésoz., 4.

1636. Chironomus ———. (Chironomidæ.)

Locality: Vale of Wardour, England. Horizon: Purbecks.

1845. Brodie. Foss. ins. sec. rocks Engl., 34, 121. *Pl.* 3, *fig.* 14.
See also C. arrogans.

1637. Chironomus arrogans. (Chironomidæ.)

Locality: England. Horizon: Purbecks.

1856. Giebel. Insect. d. vorwelt, 250.
See also Chironomus ——— Brodie.

1638. **Chironomus extinctus.** (Chironomidæ.)

Locality: Vale of Wardour, England. Horizon: Purbecks.

1845.	Brodie.	Foss. ins. sec. rocks Engl., 34, 121. *Pl.* 4, *fig.* 5.
1856.	Giebel.	Insect. d. vorwelt, 249–250.

1639. **Corethrium pertinax.** (Chironomidæ.)

Locality: Durdlestone Bay, England. Horizon: Lower Purbecks.

1854.	Westwood.	Quart. journ. geol. soc. Lond., x: 387, 393–394. *Pl.* 15, *fig.* 2.
1856.	Giebel.	Insect. d. vorwelt, 242.
1885.	Scudder.	Zittel, Handb. palaeont., i, th. ii: 810. *Fig.* 1082.
1886.	"	Zittel-Barrois, Traité de paléont., ii: 811. *Fig.* 1099.
1886.	"	Bull. U. S. geol. surv., No. 31: 91.

1640. **Culex fossilis.** (Culicidæ.)

Locality: Vale of Wardour, England. Horizon: Purbecks.

1845.	Brodie.	Foss. ins. sec. rocks Engl., 34, 121. *Pl.* 3, *fig.* 15.
1885.	Scudder.	Zittel, Handb. palaeont., i, th. ii: 810.
1886.	"	Zittel-Barrois, Traité de paléont., ii: 811.
1886.	"	Bull. U. S. geol. surv., No. 31: 92.

See also Dara fossilis.

1641. **Dara fossilis.** (Culicidæ.)

Locality: Vale of Wardour, England. Horizon: Purbecks.

1856.	Giebel.	Insect. d. vorwelt, 254.

See also Culex fossilis.

1642. **Empidia wulpii.** (Empidæ.)

Locality: Solenhofen, Bavaria. Horizon: Jura.

1869.	Weyenbergh.	Arch. mus. Teyl., ii: 258. *Pl.* 34, *figs.* 5, 5*a*.
1869.	"	Ins. foss. calc. lithogr., 12. *Pl.* 1, *figs.* 5, 5*a*.
1869.	"	Tijdschr. v. ent., (2), iv: 237.
1874.	"	Period. zool., i: 89.
1874.	"	Énum. syst. faune ent. mésoz., 3.
1886.	Scudder.	Bull. U. S. geol. surv., No. 31: 88.

1643. **Hasmona leo.** (Empidæ.)

Locality: Vale of Wardour, England. Horizon: Purbecks.

1856.,	Giebel.	Insect d. vorwelt, 209.

See also ——— ——— (Empidæ) Brodie.

1644. **Macrocera rustica.** (Mycetophilidæ.)

Locality: Vale of Wardour, England. Horizon: Purbecks.

1845.	Brodie.	Foss. ins. sec. rocks Engl., 34, 121. *Pl.* 3, *fig.* 13.

See also Sama rustica.

1645. **Macropeza (or Chenesia)** ———. (Chironomidæ ?.)

Locality: Vale of Wardour, England. Horizon: Purbecks.

1845.	Brodie.	Foss. ins. sec. rocks Engl., 34, 121. *Pl.* 5, *fig.* 15.

See also Chenesia ———, Macropeza prisca.

1646. **Macropeza liasina.** (Chironomidæ.)

Locality: Dobbertin, Mecklenburg. Horizon: Lias.

1884.	E. Geinitz.	Zeitschr. deutsch. geol. gesellsch., 1884: 582–583. *Pl* 13, *fig.* 27.

1647. Macropeza prisca. (Chironomidæ?.)

Locality: Vale of Wardour, England. **Horizon: Purbecks.**

1856. Giebel. Insect. d. vorwelt, 252.
See also Macropeza ——, Chenesia ——.

1648. Mesopsychoda dasyptera. (Culicidæ.)

Compared with Ulomyia fuliginosa Meig.

Locality: Ust Balei, Siberia. Horizon: Lias.

1889. Brauer-Redtenb.-Ganglb. Mém. acad. sc. St.-Pétersb., (7), xxxvi, No. 15: 17. *Pl.* [2], *fig.* 21.

Musca lithophila. See II, ORTHOPTERA, Idem.

1649. Platyura fittoni. (Mycetophilidæ.)

Locality: Vale of Wardour, England. **Horizon:** Purbecks.

1845. Brodie. Foss. ins. sec. rocks Engl., 33, 121. *Pl.* 3, *fig.* 9.
See also Adonia fittoni.

1650. Protomyia dubia. (Bibionidæ.)

Locality: Dobbertin, Mecklenburg. **Horizon:** Lias.

1884. E. Geinitz. Zeitschr. deutsch. geol. gesellsch., 1884: 582. *Pl.* 13, *fig.* 26.
1885. Scudder. Zittel, Handb. palaeont., i, th. ii: 810 (not to Diptera).
1886. " Zittel-Barrois, Traité de paléont., ii: 812.
1886. " Bull. U. S. geol. surv., No. 31: 92.

Psychoptera ——. See Ptychoptera ——.

1651. Ptychoptera (vic.) ——. (Tipulidæ.)

Locality: Ust Balei, Siberia. **Horizon:** Lias.

1889. Brauer-Redtenb.-Ganglb. **Mém. acad. sc. St.-Pétersb., (7), xxxvi, No. 15: 20 (Psychoptera).**

1652. Remalia sphinx. (Syrphidæ.)

Locality: England. **Horizon:** Wealden.

1845. Brodie. Foss. ins. sec. rocks Engl. (unnamed). *Pl.* 4, *fig.* 4.
1856. Giebel. Insect. d. vorwelt, 199.

1653. Rhyphus priscus. (Rhyphidæ?)

Locality: Vale of Wardour, England. **Horizon:** Purbecks.

1845. Brodie. Foss. ins. sec. rocks Engl., 34, 121. *Pl.* 4, *fig.* 10.
1885. Scudder. Zittel, Handb. palaeont., i, th. ii: 809, 810 (Chironomidæ?)
1886. " Zittel-Barrois, Traité de paléont., ii: 810, 811.
1886. " Bull. U. S. geol. surv., No. 31: 90, 91.
See also Bria prisca.

1654. Sama rustica. (Mycetophilidæ.)

Locality: Vale of Wardour, England. **Horizon: Purbecks.**

1856. Giebel. Insect. d. vorwelt, 238–239.
See also Macrocera rustica.

Sciara prisca. See II, NEUROPTERA, Idem.

1655. **Sciophila** ——. (Mycetophilidæ.)

Locality: Vale of Wardour, England. Horizon: Purbecks.

1845. Brodie. Foss. ins. sec. rocks Engl. (unnamed). *Pl.* 4, *fig.* 2.
1856. Giebel. Insect. d. vorwelt, 254.

1656. **Sciophila defossa.** (Mycetophilidæ.)

Locality: Vale of Wardour, England. Horizon: Purbecks.

1845. Brodie. Foss. ins. sec. rocks Engl., 34, 121. *Pl.* 3, *fig.* 12.
See also Thimna defossa.

1657. **Simulidium humidum.** (Simulidæ.)

Locality: Vale of Wardour, England. Horizon: Purbecks.

1856. Giebel. Insect. d. vorwelt, 229.
See also Simulium humidum.

1658. **Simulidium priscum.** (Simulidæ.)

Locality: Durdlestone Bay, England. Horizon: Middle Purbecks.

1854. Westwood. Quart. journ. geol. soc. Lond., x: 384, 394. *Pl.* 15, *fig.* 15.
1856. Giebel. Insect. d. vorwelt, 229.
1885. Scudder. Zittel, Handb. palaeont., i, th. ii: 811. *Fig.* 1087.
1886. " Zittel-Barrois, Traité de paléont., ii: 812. *Fig.* 1104.
1886. " Bull. U. S. geol. surv., No. 31: 93.

1659. **Simulium humidum.** (Simulidæ.)

Locality: Vale of Wardour, England. Horizon: Purbecks.

1845. Brodie. Foss. ins. sec. rocks Engl., 33, 121. *Pl.* 3, *fig.* 8.
1886. Scudder. Bull. U. S. geol. surv., No. 31: 93.
See also Simulidium humidum.

1660. **Tanypus dubius.** (Culicidæ.)

Locality: Vale of Wardour, England. Horizon: Purbecks.

1845. Brodie. Foss. ins. sec. rocks Engl., 33, 121. *Pl.* 3, *fig.* 10.
1885. Scudder. Zittel, Handb. palaeont., i, th. ii: 810.
1886. " Zittel-Barrois, Traité de paléont., ii: 811.
1886. " Bull. U. S. geol. surv., No. 31: 91.
See also Asuba brodiei.

1661. **Thimna defossa.** (Mycetophilidæ.)

Locality: Vale of Wardour, England. Horizon: Purbecks.

1856. Giebel. Insect. d. vorwelt, 235.
See also Sciophila defossa.

1662. **Thiras westwoodi.** (Mycetophilidæ.)

Locality: Durdlestone Bay, England. Horizon: Lower Purbecks.

1854. Westwood. Quart. journ. geol. soc. Lond., x: 396 (unnamed). *Pl.* 18, *fig.* 20.
1856. Giebel. Insect. d. vorwelt, 235.

1663. **Tipula** ——. (Tipulidæ.)

Locality: Strensham, England. Horizon: Lower Lias.

1873. Brodie. Distr. corr. foss. ins., 17.

1664. Tipula ——. (Tipulidæ.)

Locality: Dumbleton, England. **Horizon:** Lias.

1843. **Buckman.** Quart. journ. geol. soc. Lond., iv: 212 (undescr.).
1844. " Ann. nat. hist., xiv: 74 (undescr.).

1665. Tipula ——. (Tipulidæ.)

Locality: England. **Horizon:** Upper Lias.

1845. **Murchison.** Geol. Cheltenham, new ed., 108. *Pl.* 8, *fig.* 3.

1666. Tipula ——. (Tipulidæ.)

Locality: Durdlestone Bay, England. **Horizon:** Lower Purbecks.

1854. **Westwood.** Quart. journ. geol. soc. Lond., x: 393 (unnamed). *Pl.* 15, *fig.* 1.
1856. **Giebel.** Insect. d. vorwelt, 242.

1667. Tipularia teyleri. (Tipulidæ.)

Locality: Solenhofen, Bavaria. **Horizon:** Jura.

1869. **Weyenbergh.** Arch. mus. Teyl., ii: 257–258. *Pl.* 34, *figs.* 6, 6*a*.
1869. " Ins. foss. calc. lithogr., 11–12. *Pl.* 1, *figs.* 6, 6*a*.
1869. " Tijdschr. v. ent., (2), iv: 237.
1874. " Periód. zool., i: 89.
1874. " Énum. syst. faune ent. mésoz., 3.
1885. **Scudder.** Zittel, Handb. palaeont., i, th. ii: 809.
1886. " Zittel-Barrois, Traité de paléont., ii: 810.
1886. " Bull. U. S. geol. surv., No. 31: 90.

LEPIDOPTERA.

1668. —— ——.

Locality: England. **Horizon:** Lower Purbecks.

1873. **Brodie.** Distr. corr. foss. ins., 15 ("very doubtful").

1669. —— —— (butterfly).

Locality: Durdlestone Bay, England. **Horizon:** Lower Purbecks.

1854. **Westwood.** Quart. journ. geol. soc. Lond., x: 390, 396. *Pl.* 18, *fig.* 30.

1670. —— —— (larval mines). (Tineidæ and Tortricidæ.)

Locality: Kansas, Nebraska. **Horizon:** Dakota Group.

1882. **Hagen.** Nature, xxv: 265–266 (refers to figures of Lesquereux's Cretaceous flora.

—— —— (Tortricidæ). See —— —— (Tineidæ and Tortricidæ).

Breyeria borinensis. See II, NEUROPTERA, Idem.

Cyllonium boisduvalianum. See II, NEUROPTERA, Idem.

Cyllonium hewitsonianum. See II, NEUROPTERA, Idem.

Pabellovena compressa. See II, HYMENOPTERA, Idem.

Pabellovena elegans. See II, HYMENOPTERA, Idem.

Pabellovena karschii. See II, HYMENOPTERA, Idem.

1671. Palæocossus jurassicus.

Locality: Eastern Siberia. Horizon: Brown Jura.

1885.	Oppenheim.	Berl. entom. zeitschr., xxix: 333. *Pl.* 10, *figs.* 4, 6.
1886.	Scudder.	Zittel-Barrois, Traité de paléont., ii: 814, note.
1886.	"	Bull. U. S. geol. surv., xxxi: 96.

Palæontina oolitica. See II, HEMIPTERA, Idem.

Phragmatœcites damesii. See II, HEMIPTERA, Idem.

Pseudosirex darwini. See II, HYMENOPTERA, Idem.

Rhipidorhabdus gracilis. See II, HYMENOPTERA, Idem.

Rhipidorhabdus minimus. See II, HYMENOPTERA, Idem.

Rhipidorhabdus schrœteri. See II, HYMENOPTERA, Idem.

Sphinx ——. See II, HYMENOPTERA, Idem.

Sphinx schrœteri. See II, HYMENOPTERA, Idem.

Sphinx snelleni. See II, HYMENOPTERA, Idem.

1672. Tinea araliæ (mines).

Locality: Mšeno, Bohemia. Horizon: Cretaceous.

1882.	Fritsch.	Mojs., Beitr. palaeont. Oestr.-Ung., ii: 6. *Pl.* 2, *fig.* 7.
1882.	"	Foss. arthr. steink.- u. kreidef. Böhmens, 6. *Pl.* 2, *fig.* 7.
1884.	"	Vesmír, xiii: 205–206. *Fig.* 7.

Tineites crystalli. See III, LEPIDOPTERA, Idem.

Tineites lithophilus. See II, NEUROPTERA, Idem.

HYMENOPTERA.

1673. Anomalon palæon. (Ichneumonidæ.)

Locality: Solenhofen, Bavaria. Horizon: Jura.

1874.	Weyenbergh.	Period. zool., i: 86, 91. *Pl.* 3, *figs.* 7, 8.
1874.	"	Énum. syst. faune ent. mésoz., 5.
1885.	Scudder.	Zittel, Handb. palaeont., i, th. ii: 815.
1886.	"	Zittel-Barrois, Traité de paléont., ii: 817.
1886.	"	Bull. U. S. geol. surv., No. 31: 97.

1674. Apiaria antiqua.

Locality: Solenhofen, Bavaria. Horizon: Jura.

1839.	Münster.	MSS.
1839.	Germar.	Verhandl. leop.-carol. acad. naturf., xix: 210–211. *Pl.* 22, *fig.* 10$\alpha\beta$.
1850.	Heer.	Verhandl. schweiz. gesellsch. ges. naturwiss., xxxiv: 81–82 (refers it to Termites).
1850.	"	Geschichte d. insekt., 4–5.
1850.	"	Neues jahrb. min., 1850: 18.
1850.	"	Quart. journ. geol. soc. Lond., vi, ii: 69.
1852.	Giebel.	Deutschl. petref., 644.
1856.	"	Insect. d. vorwelt, 184, 497.

1856.	Hagen.	Berendt, Bernst. befindl. organ. reste vorw., ii, i: 48 (refers it to Termes).
1862.	“	Palaeontogr., x: 111 (Hymenopt. not Termes).
1869.	Weyenbergh.	Tijdschr. v. ent., (2), iv: 236.
1885.	Scudder.	Zittel, Handb. palaeont., i, th. ii: 815.
1886.	“	Zittel-Barrois, Traité de paléont., ii: 817.
1886.	“	Bull. U. S. geol. surv., No. 31: 97.

See also Sirex antiquus.

1675. Apiaria lapidea.

Locality: Solenhofen, Bavaria. Horizon: Jura.

1842.	Germar.	Münst., Beitr. z. petref., v: 84–85. *Pl.* 9, *fig.* 5; *Pl.* 13, *fig.* 10.
1850.	Heer.	Verhandl. schweiz. gesellsch. ges. naturwiss., xxxiv: 81.
1850.	“	Geschichte d. insekt., 4 (calls it an ant).
1850.	“	Neues jahrb. min., 1850: 18.
1850.	“	Quart. journ. geol. soc. Lond., vi, ii: 68.
1856.	Giebel.	Insect. d. vorwelt, 184, 497.
1862.	Hagen.	Palaeontogr., x: 111 (perhaps = Carabicina decipiens).
1869.	Weyenbergh.	Tijdschr. v. ent., (2), iv: 236.
1877.	Assmann.	Ber. versamml. deutsch. naturf., l: 192 (= Carabicina decipiens).
1885.	Scudder.	Zittel, Handb. palaeont., i, th. ii: 815.
1886.	“	Zittel-Barrois, Traité de paléont., ii: 817.
1886.	“	Bull. U. S. geol. surv., No. 31: 97.

See also II, COLEOPTERA, Carabicina decipiens.

1676. Apiaria veterana.

Locality: Solenhofen, Bavaria. Horizon: Jura.

1869.	Weyenbergh.	Arch. mus. Teyl., ii: 260. *Pl.* 34, *fig.* 8.
1869.	“	Ins. foss. calc. lithogr., 14. *Pl.* 1, *fig.* 8.
1869.	“	Tijdschr. v. ent., (2), iv: 236.
1874.	“	Periód. zool., i: 90.
1874.	“	Énum. syst. faune ent. mésoz., 4.

1677. Belostoma elongata. (Uroceridæ.)

Locality: Solenhofen, Bavaria. Horizon: Jura.

1839.	Germar.	Verhandl. leop.-carol. akad. naturf., xix: 205–206 (Belostomum). *Pl.* 22, *fig.* 6.
1852.	Giebel.	Deutschl. petref., 636.
1856.	“	Insect. d. vorwelt, 371.
1862.	Hagen.	Palaeontogr., x: 111.
1869.	Weyenbergh.	Tijdschr. v. ent., (2), iv: 233 [133].
1873.	“	Arch. mus. Teyl., iii: 239.
1873.	“	Notes ins. calc. jurass., 6.
1874.	“	Periód. zool., i: 83–84 (is a Hymenopt.?).
1877.	Assmann.	Ber. versamml. deutsch. naturf., l: 192 (Hymenopt. near Sirex).
1885.	Scudder.	Zittel, Handb. palaeont., i, th. ii: 815. *Fig.* 1094.
1886.	“	Zittel-Barrois, Traité de paléont., ii: 814 note, 817. *Fig.* 1111.
1886.	“	Bull. U. S. geol. surv., No. 31: 61, 96, 97.

See also Sphinx schrœteri, etc.

1678. Belostoma schrœteri. (Uroceridæ.)

Locality: Solenhofen, Bavaria. Horizon: Jura.

1862.	Hagen.	Palaeontogr., x: 109, 111–112.

See also Sphinx schrœteri, etc.

Belostomum elongatum. See Belostomum elongata.

1679. **Bombus? conservatus.** (Apidæ.)

Locality: Solenhofen, Bavaria. Horizon: Jura.

1869. Weyenbergh. Arch. mus. Teyl., ii: 259–260. *Pl.* 34, *fig.* 7.
1869. “ Ins. foss. calc. lithogr., 13–14. *Pl.* 1, *fig.* 7.
1869. “ Tijdschr. v. ent., (2), iv: 236.
1874. “ Periód. zool., i: 90.
1874. “ Énum. syst. faune ent. mésoz , 4.
1885. Scudder. Zittel, Handb. palaeont., i, th. ii: 815.
1886. “ Zittel-Barrois, Traité de paléont., ii: 817.
1886. “ Bull. U. S. geol. surv., No. 31: 97.

1680. **Fabellovena compressa.** (Uroceridæ.)

Locality: Solenhofen, Bavaria. Horizon: Jura.

1885. Oppenheim. Berl. entom. zeitschr., xxix: 345. *Pl.* 12, *fig.* 11.
See also Sphinx schrœteri, etc.

1681. **Fabellovena elegans.** (Uroceridæ.)

Locality: Solenhofen, Bavaria. Horizon: Jura.

1885. Oppenheim. Berl. entom. zeitschr., xxix: 345. *Pl.* 12, *fig.* 14.
See also Sphinx schrœteri, etc.

1682. **Fabellovena karschi.** (Uroceridæ.)

Locality: Solenhofen, Bavaria. Horizon: Jura.

1885. Oppenheim. Berl. entom. zeitschr., xxix: 344. *Pl.* 12, *fig.* 13.
See also Sphinx schrœteri, etc.

1683. **Formicium brodiei.** (Formicidæ.)

Locality: Durdlestone Bay, England. Horizon: Lower Purbecks.

1854. Westwood. Quart. journ. geol. soc. Lond., x: 388, 393. *Pl.* 14, *fig.* 8.
1885. Scudder. Zittel, Handb. palaeont., i, th. ii: 815, 816. *Fig.* 1095.
1886. “ Zittel-Barrois, Traité de paléont., ii: 817. *Fig.* 1112.
1886. “ Bull. U. S. geol. surv., No. 31: 97.
See also Ponera brodiei.

1684. **Hagenia schrœteri.** (Uroceridæ.)

Locality: Solenhofen, Bavaria. Horizon: Jura.

1869. Weyenbergh. Arch. mus. Teyl., ii: 250, 272.
1869. “ Ins. foss. calc. lithogr., 4, 26.
1869. “ ? Tijdschr. v. ent., (2), iv: 233 [133].
See also Sphinx schrœteri, etc.

1685. **Ichneumon ——.** (Ichneumonidæ.)

Locality: Solenhofen, Bavaria. Horizon: Jura.

1820. Schlotheim. Petrefactenk., 43.

1686. **Myrmica heeri.** (Formicidæ.)

Locality: Durdlestone Bay, England. Horizon: Lower Purbecks.

1856. Giebel. Insect. d. vorwelt, 178.
See also Myrmicium heeri.

1687. **Myrmicium heeri.** (Formicidæ.)

Locality: Durdlestone Bay, England. Horizon: Lower Purbecks.

1854.	Westwood.	Quart. journ. geol. soc. Lond., x: 390, 396. *Pl.* 18, *fig.* 21.
1885.	Scudder.	Zittel, Handb. palaeont., i, th. ii: 815.
1886.	“	Zittel-Barrois, Traité de paléont., ii: 817.
1886.	“	Bull. U. S. geol. surv., No. 31: 97.

See also Myrmica heeri.

1688. **Nematus cretaceus** (eggs).

Considered by Renger as a cryptogam and called Pteridophyllites sorigerus.

Locality: Bohdankov, Bohemia. Horizon: Cretaceous.

1882.	Fritsch.	Mojs., Beitr. palaeont. Oestr.-Ung., ii: 6. *Pl.* 2, *figs.* 4–6.
1882.	“	Foss. arthr. steink.-u. kreidef. Böhmen, 6. *Pl.* 2, *figs.* 4–6.
1884.	“	Vesmír, xiii: 205–206. *Figs.* 4–5.

1689. **Palæomyrmex prodromus.** (Formicidæ.)

Locality: Schambelen, Switzerland. Horizon: Lias.

1865.	Heer.	Urwelt der Schweiz, 91. *Pl.* 8, *fig.* 31.
1872.	“	Monde prim. Suisse, 111. *Pl.* 8, *fig.* 31.
1876.	“	Prim. world Switz., i: 90. *Pl.* 8, *fig.* 31.
1879.	“	Urwelt der Schweiz, 2^e aufl., 101. *Pl.* 8, *fig.* 31.
1879.	Goss.	Ent. monthl. mag., xvi: 9 (prob. not Hymenopt.).
1880.	“	Geol. ant. ins., 26 (prob. not Hymenopt.).
1885.	Scudder.	Zittel, Handb. palaeont., i, th. ii: 815. *Fig.* 1093.
1886.	“	Zittel-Barrois, Traité de paléont., ii: 817. *Fig.* 1110.
1886.	“	Bull. U. S. geol. surv., No. 31: 97.

1690. **Ponera brodiei.** (Formicidæ.)

Locality: Durdlestone Bay, England. Horizon: Lower Purbecks.

1856.	Giebel.	Insect. d. vorwelt, 173–174.

See also Formicium brodiei.

1691. **Pseudosirex darwini.** (Uroceridæ.)

Locality: Solenhofen, Bavaria. Horizon: Jura.

1873.	Weyenbergh.	Arch. mus. Teyl., iii: 238.
1873.	“	Notes ins. calc. jurass., 5.
1874.	“	Periód. zool., i: 82–83, 91. *Pl.* 3, *figs.* 1, 2.
1874.	“	Énum. syst. faune ent. mésoz., 5.
1878.	“	Pet. nouv. entom., ii: 253.
1885.	Scudder.	Zittel, Handb. palaeont., i, th. ii: 813.
1886.	“	Zittel-Barrois, Traité de paléont., ii: 814.
1886.	“	Bull. U. S. geol. surv., No. 31: 95.

See also Sphinx schrœteri, etc.

1692. **Pseudosirex elongatus.** (Uroceridæ.)

Locality: Solenhofen, Bavaria. Horizon: Jura.

1886.	Deichmüller.	Ins. lith. schichten dresd. mus., 83–84. *Pl.* 5, *figs.* 21–22.

See also Sphinx schrœteri, etc.

1693. **Pseudosirex minimus.** (Uroceridæ.)

Locality: Solenhofen, Bavaria. Horizon: Jura.

1886.	Deichmüller.	Ins. lith. schichten dresd. mus., 84. *Pl.* 5, *fig.* 23.

See also Rhipidorhabdus minimus.

1694. Pseudosirex schrœteri. (Uroceridæ.)

Locality: Solenhofen, Bavaria. Horizon: Jura.

1886. Deichmüller. Ins. lith schichten dresd. mus., 82–83.
See also Sphinx schrœteri, etc.

1695. Rhipidorhabdus ——. (Uroceridæ.)

Locality: Bavaria. Horizon: Jura.

1888. Oppenheim. Palaeontogr., xxxiv: 243–247. *Pl.* 30, *fig.* 10.

1696. Rhipidorhabdus gracilis. (Uroceridæ.)

Locality: Solenhofen, Bavaria. Horizon: Jura.

1885. Oppenheim. Berl. entom. zeitschr., xxix: 344. *Pl.* 11, *fig.* 10.
See also Sphinx schrœteri, etc.

1697. Rhipidorhabdus minimus. (Uroceridæ.)

Locality: Solenhofen, Bavaria. Horizon: Jura.

1885. Oppenheim. Berl. entom. zeitschr., xxix: 344. *Pl.* 11, *fig.* 9.
See also Pseudosirex minimus.

1698. Rhipidorhabdus schrœteri. (Uroceridæ.)

Locality: Solenhofen, Bavaria. Horizon: Jura.

1885. Oppenheim. Berl. entom. zeitschr., xxix: 344. *Pl.* 11, *fig.* 7.
See also Sphinx schrœteri, etc.

1699. Sirex antiquus.

Locality: Solenhofen, Bavaria. Horizon: Jura.

1877. Assmann. Ber. versamml. deutsch. naturf., l: 192.
See also Apiaria antiqua.

1700. Sphinx ——. (Uroceridæ.)

Locality: Solenhofen, Bavaria. Horizon: Jura.

1820. Schlotheim. Petrefactenk., 42.
See also Sphinx schrœteri, etc.

1701. Sphinx schrœteri. (Uroceridæ.)

Locality: Solenhofen, Bavaria. Horizon: Jura.

1784. Schroeter. Neue literatur u. beytr., i: 411–413 (unnamed, compared by him to S. convolvuli). *Pl.* 3, *fig.* 16.
1820. Schlotheim. Petrefactenk., 42 ("Sphinx").
1839. Germar. Verhandl. leop.-carol. akad. naturf., xix: 193.
1852. Giebel. Deutschl. petref., 644.
1856. " Insect. d. vorwelt, 188.
1877. Assmann. Ber. versamml. deutsch. naturf., l: 192 ("Holzwespe").
1885. Scudder. Zittel, Handb. palaeont., i, th. ii: 815 (not a Belostoma).
1886. " Zittel-Barrois, Traité de paléont., ii: 817.
1886. " Bull. U. S. geol. surv., No. 31: 97.

See also Sphinx —— Schlotheim, Belostoma schrœteri, Hagenia schrœteri, Rhipidorhabdus schrœteri, Pseudosirex schrœteri, Belostoma elongata, Pseudosirex elongata, Sphinx snelleni, Pseudosirex darwini, Rhipidorhabdus gracilis, Fabellovena compressa, F. elegans, F. karschi.

1702. Sphinx snelleni. (Uroceridæ.)

Locality: Solenhofen, Bavaria. Horizon: Jura.

1869. Weyenbergh. Arch. mus. Teyl., ii: 261–263. *Pl.* 34, *figs.* 9, 9*a*, 10, 10*a*.
1869. " Ins. foss. calc. lithogr., 15–17. *Pl.* 1, *figs.* 9, 9*a*, 10, 10*a*.
1869. " Tijdschr. v. ent., (2), iv: 236.
1873. " Arch. mus. Teyl., iii: 236–239.
1873. " Notes ins. calc. jurass., 3–6.
1874. " Periód. zool., i: 91.
1874. " Énum. syst. faune ent mésoz., 5.
1880. Dawson. Chain of life, 149. *Fig.* 130.
1885. Scudder. Zittel, Handb. palaeont., i, th. ii, 813.
1886. " Zittel-Barrois, Traité de paléont., ii: 814.
1886. " Bull. U. S. geol. surv., No. 31: 95.
See also Sphinx schrœteri. etc.

TRACKS AND FOOTPRINTS.

[Found in the older rocks, mostly in the Trias, and accredited to insects.]

1703. ——— ——— (unnamed).

Locality: Connecticut River, Mass. Horizon: Trias.

1856. Deane. Journ. acad. nat. sc. Philad., (2), iii: 176–177, 177. *Pl.* 19, *figs. e, h, k, l.*
1861. " Ichnogr. Conn. river, 58. *Pl.* 40, *fig.* 4; *Pl.* 42, *figs.* 1–3.

1704. Acanthichnus alatus.

Locality: Massachusetts. Horizon: Trias.

1865. Hitchcock. Suppl. ichn. N. Engl., 14, 16. *Pl.* 6, *fig.* 6.

1705. Acanthichnus alternans.

Locality: Turner's Falls, Mass. Horizon: Trias.

1865. Hitchcock. Suppl. ichn. N. Engl., 14, 16 (=A. cursorius pars.). *Pl.* 6, *fig.* 5

1706. Acanthichnus anguineus.

Locality: Massachusetts. Horizon: Trias.

1865. Hitchcock. Suppl. ichn. N. Engl., 14, 16. *Pl.* 7, *fig.* 4.

1707. Acanthichnus cursorius.

Locality: Turner's Falls, Mass. Horizon: Trias.

1856. Deane. Journ. acad. nat. sci. Philad., (2), iii: 176 (without name). *Pl.* 19, *fig. f.*
1858. Hitchcock. Ichn. N. Engl., 150–151. *Pl.* 28, *fig.* 1; *Pl.* 31, *fig.* 1.
1865. " Suppl. ichn. N. Engl., 13, 16. *Pl.* 6, *figs.* 1, 7, 8, 18; *Pl.* 7, *fig.* 10.
See also A. alternans.

1708. Acanthichnus divaricatus.

Locality: Massachusetts. Horizon: Trias.

1865. Hitchcock. Suppl. ichn. N. Engl., 15, 16. *Pl.* 6, *fig.* 10; *Pl.* 7, *fig.* 10.

1709. Acanthichnus punctatus.

Locality: Massachusetts. Horizon: Trias.

1865. Hitchcock. Suppl. ichn. N. Engl., 15, 16. *Pl.* 6, *fig.* 13.

1710. Acanthichnus rectilinearis.

Locality: Massachusetts. Horizon: Trias.

1865. Hitchcock. Suppl. ichn. N. Engl., 15, 16. *Pl.* 6, *fig.* 2.

1711. Acanthichnus saltatorius.

Locality: Turner's Falls, Mass. Horizon: Trias.

1858. Hitchcock. Ichn. N. Engl., 151. *Pl.* 28, *figs.* 4, 5.
1861. Deane. Ichnogr. Conn. river, 57. *Pl.* 40. *fig.* 1.
1865. Hitchcock. Suppl. ichn. N. Engl., 15, 16. *Pl.* 6, *figs.* 9, 12.

1712. Acanthichnus tardigradus.

Locality: Turner's Falls, Mass. Horizon: Trias.

1856. Deane. Journ. acad. nat. sc. Philad., (2), iii: 176 (without name). *Pl.* 19, *fig. g.*
1858. Hitchcock. Ichn. N. Engl., 151. *Pl.* 28, *fig.* 1.
1861. Deane. Ichnogr. Conn. river, 58. *Pl.* 40, *fig.* 3.
See also Pterichnus centipes.

1713. Acanthichnus trilinearis.

Locality: Massachusetts. Horizon: Trias.

1865. Hitchcock. Suppl. ichn. N. Engl., 14-15, 16. *Pl.* 6, *fig.* 11.

1714. Ampelichnus sulcatus.

Locality: Massachusetts. Horizon: Trias.

1865. Hitchcock. Suppl. ichn. N. Engl., 19-20. *Pl.* 6, *fig.* 16.
See also Grammepus unordinatus.

1715. Bifurculapes ——.

Locality: Connecticut River, Mass. Horizon: Trias.

1861. Deane. Ichnogr. Conn. river, 58. *Pl.* 41, *fig.* 4.

1716. Bifurculapes curvatus.

Locality: Massachusetts. Horizon: Trias.

1865. Hitchcock. Suppl. ichn. N. Engl., 15, 16 (Bifurculipes). *Pl.* 7, *figs.* 2, 9.
1890. Lesley. Dict. foss. Penns., ii: 807. *Fig.*

1717. Bifurculapes elachistotatus.

Locality: Turner's Falls, Mass. Horizon: Trias.

1858. Hitchcock. Ichn. N. Engl., 154-155. *Pl.* 29, *fig.* 4; *Pl.* 30, *fig.* 3
1865. " Suppl. ichn. N. Engl., 16.

1718. Bifurculapes laqueatus.

Locality: Turner's Falls, Mass. Horizon: Trias.

1858. Hitchcock. Ichn. N. Engl., 153. *Pl.* 30, *figs.* 1-3. (*Fig.* 2 is marked tardigradus on the plate.)
1861. Deane. Ichnogr. Conn. river, 58. *Pl.* 41, *figs.* 5, 6.
1865. Hitchcock. Suppl. ichn. N. Engl., 16.

1719. Bifurculapes scolopendroideus.

Locality: Turner's Falls, Mass. Horizon: Trias.

1858. Hitchcock. Ichn. N. Engl., 153-154. *Pl.* 27, *fig.* 1.
1865. " Suppl. ichn. N. Engl., 14, 16.

Bifurculapes tardigradus. See B. laqueatus.

1720. Bifurculapes tuberculatus.

Locality: Turner's Falls, Mass. Horizon: Trias.

1858. Hitchcock. Ichn. N. Engl., 153. *Pl.* 28, *fig.* 1; *Pl.* 30, *fig.* 4.
1861. Deane. Ichnogr. Conn. river, 58. *Pl.* 41, *fig.* 2.
1865. Hitchcock. Suppl. ichn. N. Engl., 15 (Bifurculipes).

Bifurculipes curvatus. See Bifurculapes curvatus.

Bifurculipes tuberculatus. See Bifurculapes tuberculatus.

1721. Conopsoides curtus.

Locality: Massachusetts. Horizon: Trias.

1865. Hitchcock. Suppl. ichn. N. Engl., 15, 16. *Pl.* 6, *fig.* 4; *Pl.* 18, *fig.* 4.

1722. Conopsoides larvalis.

Localities: Turner's Falls, Mass.; Wethersfield, Conn. Horizon: Trias.

1856. Deane. Journ. acad. nat. sc. Philad., (2), iii: 176 (unnamed). *Pl.* 19, *figs. b, c.*
1858. Hitchcock. Ichn. N. Engl., 152. *Pl.* 29, *fig.* 6; *Pl.* 30, *figs.* 2, 4.
1861. Deane. Ichnogr. Conn. river, 57, 58. *Pl.* 40, *fig.* 2; *Pl.* 41, *fig.* 3.
1865. Hitchcock. Suppl. ichn. N. Engl., 16.

1723. Copeza crucularis.

Locality: Massachusetts. Horizon: Trias.

1865. Hitchcock. Suppl. ichn. N. Engl., 15, 16.
See also Lithographus crucularis.

1724. Copeza propinquata.

Locality: Massachusetts. Horizon: Trias.

1865. Hitchcock. Suppl. ichn. N. Engl., 15, 16. *Pl.* 7, *figs.* 1, 10; *Pl.* 18, *fig.* 2.
1890. Lesley. Dict. foss. Penns., ii: 807 (propinquis). *Fig.*
See also Lithographus hieroglyphicus.

Copeza propinquis. See Copeza propinquata.

1725. Copeza punctata.

Locality: Massachusetts. Horizon: Trias.

1865. Hitchcock. Suppl. ichn. N. Engl., 15, 16. *Pl.* 6, *figs.* 14, 15 (?); *Pl.* 18, *fig.* 1

1726. Copeza triremis.

Locality: Turner's Falls, Mass. Horizon: Trias.

1858. Hitchcock. Ichn. N. Engl., 159–160. *Pl.* 31, *fig.* 4.
1865. " Suppl. ichn. N. Engl., 15, 16.

1727. Grammepus erismatus.

Locality: Turner's Falls, Mass. Horizon: Trias.

1858. Hitchcock. Ichn. N. Engl., 155–156. *Pl.* 29, *fig.* 1.
1865. " Suppl. ichn N. Engl., 13, 16.

Grammepus uniordinatus. See Grammepus unordinatus.

1728. Grammepus unordinatus.

Locality: Turner's Falls, Mass. Horizon: Trias.

1858. Hitchcock. Ichn. N. Engl., 156. *Pl.* 29, *fig.* 2.
1865. " Suppl. ichn. N. Engl., 2 (uniordinatus).
See also Ampelichnus sulcatus.

1729. Haplotichnus indianensis.

Locality: Orange County, Ind. Horizon: Kaskaskia group.

1889. Miller. N. A. geol. and pal., 578. *Fig.* 1086.

1730. Harpepus capillaris.

Locality: Massachusetts. Horizon: Trias.

1865. Hitchcock. Suppl. ichn. N. Engl., 16. *Pl.* 7, *fig.* 6.

1731. Hexapodichnus horrens.

Locality: Turner's Falls, Mass. Horizon: Trias.

1858. Hitchcock. Ichn. N. Engl., 158. *Pl.* 30, *fig.* 1.
1865. " Suppl. ichn. N. Engl., 16.

1732. Hexapodichnus magnus.

Locality: Turner's Falls, Mass. Horizon: Trias.

1858. Hitchcock. Ichn. N. Engl., 158. *Pl.* 29, *fig.* 7.
1861. Deane. Ichnogr. Conn. river, 58. *Pl.* 40, *fig.* 5.
1865. Hitchcock. Suppl. ichn. N. Engl., 16.

1733. Lithographus cruscularis.

Locality: Turner's Falls, Mass. Horizon: Trias.

1856. Deane. Journ. acad. nat. sc. Phil., (2), iii: 176 (unnamed). *Pl.* 19, *fig. d.*
1858. Hitchcock. Ichn. N. Engl., 157. *Pl.* 29, *fig.* 4; *Pl.* 30, *fig.* 3.
See also Copeza cruscularis.

1734. Lithographus hieroglyphicus.

Locality: Turner's Falls, Mass. Horizon: Trias.

1858. Hitchcock. Ichn. N. Engl., 156-157. *Pl.* 27, *fig.* 2; *Pl.* 29, *fig.* 3.
1861. Deane. Ichnogr. Conn. river, 58. *Pl.* 41, *fig.* 1.
See also Copeza propinquata.

1735. Lunula obscura.

Locality: Turner's Falls, Mass. Horizon: Trias.

1865. Hitchcock. Suppl. ichn. N. Engl., 17-18. *Pl.* 2, *fig.* 6.

1736. Plangtichnus erraticus.

Locality: Orange County, Ind. Horizon: Kaskaskia group.

1889. Miller. N. A. geol. and pal., 580. *Fig.* 1093.

1737. Pterichnus centipes.

Locality: Turner's Falls. Mass. Horizon: Trias.

1865. Hitchcock. Suppl. ichn. N. Engl., 14. *Pl.* 7, *fig.* 3.
1890. Lesley. Dict. foss. Penns., ii: 807. *Figs.*
See also Acanthichnus tardigradus.

1738. Sagittarius alternans.

Locality: Massachusetts. Horizon: Trias.

1865. Hitchcock. Suppl. ichn. N. Engl., 16. *Pl.* 6, *fig.* 3; *Pl.* 18, *fig.* 5.

1739. Saltator bipedatus.

Locality: Turner's Falls, Mass. Horizon: Trias.

1858. Hitchcock. Ichn. N. Engl., 137. *Pl.* 24, *fig.* 8; *Pl.* 51, *fig.* 7.
1865. " Suppl. ichn. N. Engl., 14.

1740. Saltator caudatus.

Locality: Turner's Falls, Mass. Horizon: Trias.

1858. Hitchcock. Ichn. N. Engl., 138. *Pl.* 24, *figs.* 9, 11.
1865. " Suppl. ichn. N. Engl., 14.

1741. Sphærapus larvalis.

Locality: Turner's Falls, Mass. Horizon: Trias.

1858. Hitchcock. Ichn. N. Engl., 164. *Pl.* 28, *fig.* 2.

1742. Sphærapus magnus.

Locality: Turner's Falls, Mass. Horizon: Trias.

1858. Hitchcock. Ichn. N. Engl., 164-165. *Pl.* 28, *fig.* 3.

1743. Treptichnus bifurcus.

Locality: Orange County, Ind. Horizon: Kaskaskia group.

1889. Miller. N. A. geol. and pal., 581. *Fig.* 1095.

III.—CENOZOIC FOSSILS.

MYRIAPODA.

1744. ——— ———. (Julidæ.)

Locality: Castelnaud, France. Horizon: Tertiary.

1818. Serres. Journ. physique, lxxxvii: 173.
See also Julus ——— Serres, etc.

1745. Blaniulus ———. (Julidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1856. Menge. Progr. petrischule Danzig, 1856: 6.

1746. Cermatia ———. (Cermatiidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1845. Berendt. Bernst. befindl. organ. reste vorw., i: 56.

1747. Cermatia ———. (Cermatiidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1856. Menge. Progr. petrischule Danzig, 1856: 6.

1748. Cermatia illigeri. (Cermatiidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1854. Koch-Berendt. Berendt, Bernst. befindl. organ. reste vorw., i, th. ii: 15–16. *Pl.* 1, *fig.* 6*a*.
1854. Menge. Koch-Berendt, Bernst. befindl. organ. reste vorw., i, th. ii: 8.
See also Scutigera illigeri.

1749. Cermatia leachii. (Cermatiidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1854. Koch-Berendt. Berendt, Bernst. befindl. organ. reste vorw., i, th. ii: 14–15. *Pl.* 1, *fig.* 6.
1854. Menge. Koch-Berendt, Bernst. befindl. organ. reste vorw., i, th. ii: 8.
See also Scutigera illigeri.

1750. Craspedosoma ——. (Lysiopeltidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1845. Berendt. Bernst. befindl. organ. reste vorw., i: 56.

1751. Craspedosoma —— (6 sp.). (Lysiopeltidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1856. Menge. Progr. petrischule Danzig, 1856: 6.

1752. Craspedosoma aculeatum. (Lysiopeltidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1854. Menge. Koch-Berendt, Bernst. befindl. organ. reste vorw., i, th. ii: 14.
1856. Giebel. Insect. d. vorwelt, 486.

1753. Craspedosoma affine. (Lysiopeltidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1854. Koch-Berendt. Berendt, Bernst. befindl. organ. reste vorw., i, th. ii: 13–14. *Pl.* 1, *fig.* 5*a*.
1856. Giebel. Insect. d. vorwelt, 486.

1754. Craspedosoma angulatum. (Lysiopeltidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1854. Koch-Berendt. Berendt, Bernst. befindl. organ. reste vorw., i, th. ii: 13. *Pl.* 1, *fig.* 5.
1856. Giebel. Insect. d. vorwelt, 486.
1885. Scudder. Zittel, Handb. palaeont., i, th. ii: 731. *Fig.* 903.
1886. “ Zittel-Barrois, Traité de paléont., ii: 730. *Fig.* 919.

1755. Craspedosoma armatum. (Lysiopeltidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1854. Menge. Koch-Berendt, Bernst. befindl. organ. reste vorw., i, th. ii: 14.
1856. Giebel. Insect. d. vorwelt, 486–487.

1756. Craspedosoma cylindricum. (Lysiopeltidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1854. Menge. Koch-Berendt, Bernst. befindl. organ. reste vorw., i, th. ii: 14.
1856. Giebel. Insect. d. vorwelt, 487.

1757. Craspedosoma obtusangulum. (Lysiopeltidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1854.	Menge.	Koch-Berendt, Bernst. befindl. organ. reste vorw., i, th. ii: 14.
1856.	Giebel.	Insect. d. vorwelt, 486.

1758. Craspedosoma setosum. (Lysiopeltidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1854.	Menge.	Koch-Berendt, Bernst. befindl. organ. reste vorw., i, th. ii: 14.
1856.	Giebel.	Insect. d. vorwelt, 487.

1759. Euzonus ——. (Lysiopeltidæ.)

Locality: Prussian Amber. Horizon: Ligurian.

1856.	Menge.	Progr. petrischule Danzig, 1856: 6.

1760. Euzonus collulum. (Lysiopeltidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1854.	Menge.	Koch-Berendt, Bernst. befindl. organ. reste vorw., i, th. ii: 14.
1853-'56.	Bronn.	Lethæa geogn., 3e aufl., iii: 623.
1885.	Scudder.	Zittel, Handb. palaeont., i, th. ii: 731.
1886.	"	Zittel-Barrois, Traité de paléont., ii: 730.
1886.	"	Bull. U. S. geol. surv., No. 31: 17.

See also E. zonatus.

1761. Euzonus zonatus. (Lysiopeltidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1856.	Giebel.	Insect. d. vorwelt, 487.

See also E. collulum.

1762. Geophilus —— (3 sp.). (Geophilidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1856.	Menge.	Progr. petrischule Danzig, 1856: 6.

1763. Geophilus brevicaudatus. (Geophilidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1854.	Menge.	Koch-Berendt, Bernst. befindl. organ. reste vorw., i, th. ii: 19.
1856.	Giebel.	Insect. d. vorwelt, 489.

1764. Geophilus crassicornis. (Geophilidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1854.	Menge.	Koch-Berendt, Bernst. befindl. organ. reste vorw., i, th. ii: 19.
1856.	Giebel.	Insect. d. vorwelt, 490.

1765. Geophilus filiformis. (Geophilidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1854.	Menge.	Koch-Berendt, Bernst. befindl. organ. reste vorw., i, th. ii: 19.
1856.	Giebel.	Insect. d. vorwelt, 490.

1766. Glomeris denticulata. (Glomeridæ.)

Locality: Prussian amber. Horizon: Ligurian.

1854.	Menge.	Koch-Berendt, Bernst. befindl. organ. reste vorw., i, th. ii: 12.
1856.	Giebel.	Insect. d. vorwelt, 485.
1885.	Scudder.	Zittel, Handb. palaeont., i, th. ii: 731.
1886.	"	Zittel-Barrois, Traité de paléont., ii: 730.
1886.	"	Bull. U. S. geol. surv., No. 31: 17.

1767. Julus ——. (Julidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1845. Berendt. Bernst. befindl. organ. reste vorw., i: 56.

1768. Julus ——. (Julidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1835. Gravenhorst. Uebers. schles. gesellsch. vaterl. cult., 1834: 93.

1769. Julus ——. (Julidæ.)

Locality: Aix, France. Horizon: Ligurian.

1847. Hope. Trans. ent. soc. Lond., iv: 253.

1770. Julus —— (3 sp.). (Julidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1856. Menge. Progr. petrischule Danzig, 1856: 6.

1771. Julus ——. (Julidæ.)

Locality: Florissant, Colo. Horizon: Oligocene.

1881. Scudder. Bull. U. S. geol. surv. terr., vi: 294.
1883. " Ann. rep. U. S. geol. surv. terr., xii: 288.
Since proved to be a plant.

1772. Julus ——. (Julidæ.)

Compared with J. sabulosus.

Locality: Vicinity of Montpellier, France. Horizon: Calcaires lacustres.

1829. Serres. Geogn. terrains tert., 209–210.
1840. Meyer. Ersch. u. Gruber, encycl. wiss., sect. 2, th. xviii: 538.
See also —— —— (Julidæ) Serres, J. fabulosus, J. sabulosus (vic.)

1773. Julus antiquus. (Julidæ.)

Locality: Rott, Rhenish Prussia. Horizon: Aquitanian.

1878. Heyden. MSS.
1878. Bertkau. Verhandl. naturh. ver. preuss. Rheinl., (4), v: 360. *Pl.* 5, *fig.* 8.
1885. Scudder. Zittel, Handb. palaeont., i, th. ii: 731. *Fig.* 904.
1886. " Zittel-Barrois, Traité de paléont., ii: 730. *Fig.* 920.
1886. " Bull. U. S. geol. surv., No. 31: 18.

1774. Julus badius. (Julidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1854. Menge. Koch-Berendt, Bernst. befindl. organ. reste vorw., i, th. ii: 13.
1856. Giebel. Insect. d. vorwelt, 486.

1775. Julus fabulosus. (Julidæ.)

(By mistake for Julus sp. vic. sabulosus.)

Locality: Near Montpellier, France. Horizon: Süsswasserkalk.

1834. Keferstein. Naturg. erdkörp., i: 370.
1846. Geinitz. Grundr. versteinerungsk., 193
See also Julus —— Serres, etc.

1776. **Julus lævigatus.** (Julidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1854. Koch-Berendt. Berendt, Bernst. befindl. organ. reste vorw., i, th. ii: 12–13. *Pl.* 1, *fig.* 4.
1856. Giebel. Insect. d. vorwelt, 485.

1777. **Julus politus.** (Julidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1854. Menge. Koch-Berendt, Bernst. befindl. organ. reste vorw., i, th. ii: 13.
1856. Giebel. Insect. d. vorwelt, 485.

1778. **Julus rubens.** (Julidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1854. Menge. Koch-Berendt, Bernst. befindl. organ. reste vorw., i, th. ii: 13.
1856. Giebel. Insect. d. vorwelt, 486.

1779. **Julus sabulosus** (vic). (Julidæ.)

Locality: Montpellier, France. Horizon: Lacustrine limestone.

1885. Scudder. Zittel, Handb. palaeont., i, th. ii: 731.
1886. " Zittel-Barrois, Traité de paléont., ii: 730.
1886. " Bull. U. S. geol. surv., No. 31: 18.

See also Julus —— Serres, etc.

1780. **Julus telluster.** (Julidæ.)

Locality: Green River, Wyo. Horizon: Oligocene.

1878. Scudder. Bull. U. S. geol. surv. terr., iv: 776.
1885. " Zittel, Handb. palaeont., i, th. ii: 731.
1886. " Zittel-Barrois, Traité de paléont., ii: 730.
1886. " Bull. U. S. geol. surv., No. 31: 18.
1890. " Tert. ins. N. A., 44. *Pl.* 11, *fig.* 5.

1781. **Julus terrestris** (recent). (Julidæ.)

Localities: Amber (Brullé, Berendt); Tharand, Saxony (Cotta). Horizon: Ligurian, (Berendt); Gneiss seams (Cotta).

[1761. Linné. Faun. suec., ed. alt., No. 2066.]
1830. Berendt. Insekten im bernstein, 38.
1833. Cotta. Neues jahrb. min., 1833: 392–394. *Pl.* 5, *figs.* 1, 2.
1839. Brullé. Gisem. ins. foss., 19.
1885. Scudder. Zittel, Handb. palaeont., i, th. ii: 731.
1886. " Zittel-Barrois, Traité de paléont., ii: 730.

• 1782. **Lithobius ——.** (Lithobiidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1845. Berendt. Bernst. befindl. organ. reste vorw., i: 56.

1783. **Lithobius ——** (8 sp.). (Lithobiidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1856. Menge. Progr. petrischule Danzig, 1856: 6.

1784. **Lithobius brevicornis.** (Lithobiidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1854. Menge. Koch-Berendt, Bernst. befindl. organ. reste vorw., i, th. ii: 18.
1856. Giebel. Insect. d. vorwelt, 491.

1785. Lithobius longicornis. (Lithobiidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1854. Koch-Berendt. Berendt, Bernst. befindl. organ. reste vorw., i, th. ii: 18. *Pl.* 2, *fig.* 7*b*.
1856. Giebel. Insect. d. vorwelt, 490.

1786. Lithobius maxillosus. (Lithobiidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1854. Koch-Berendt. Berendt, Bernst. befindl. organ. reste vorw., i, th. ii: 16–17. *Pl.* 2, *fig.* 7.
1856. Giebel. Insect. d. vorwelt, 490.
1885. Scudder. Zittel, Handb. palaeont., i, th. ii: 727. *Fig.* 895.
1886. " Zittel-Barrois, Traité de paléont., ii: 726. *Fig.* 912.

1787. Lithobius octops. (Lithobiidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1854. Menge. Koch-Berendt, Bernst. befindl. organ. reste vorw., i, th. ii: 18.

1788. Lithobius oxylopus. (Lithobiidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1854. Menge. Koch-Berendt, Bernst. befindl. organ. reste vorw., i, th. ii: 18.
1856. Giebel. Insect. d. vorwelt, 490.

1789. Lithobius planatus. (Lithobiidæ.)

Compared with L. vulgaris.

Locality: Prussian amber. Horizon: Ligurian.

1854. Koch-Berendt. Berendt, Bernst, befindl. organ. reste vorw., i, th. ii: 17–18. *Pl.* 2, *fig.* 7*a*.
1856. Giebel. Insect. d. vorwelt, 490.

1790. Lithobius pleonops. (Lithobiidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1854. Menge. Koch-Berendt, Benrst. befindl. organ. reste vorw., i, th. ii: 18.

1791. Lithobius scaber. (Lithobiidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1854. Menge. Koch-Berendt, Bernst. befindl. organ. reste vorw., i, th. ii: 18.

1792. Lithobius spinulosus. (Lithobiidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1854. Menge. Koch-Berendt, Bernst. befindl. organ. reste vorw., i, th. ii: 18.
1856. Giebel. Insect. d. vorwelt, 490–491.

1793. Lithobius striatus. (Lithobiidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1854. Menge. Koch-Berendt, Bernst. befindl. organ. reste vorw., i, th. ii: 18.
1856. Giebel. Insect. d. vorwelt, 491.

1794. Lophonotus ——. (Polyxenidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1856. Menge. Progr. petrischule Danzig, 1856: 6.

1795. **Lophonotus hystrix.** (Polyxenidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1854. **Menge.** Koch-Berendt, Bernst. befindl. organ reste vorw., i, th. ii: 12.
1853–'56. **Bronn.** Lethæa geogn., 3e aufl., iii: 622–623.
1856. **Giebel.** Insect. d. vorwelt, 488.
See also Phryssonotus hystrix.

1796. **Phryssonotus hystrix.** (Polyxenidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1885. **Scudder.** Zittel, Handb. palaeont. i, th. ii: 731.
1886. " Zittel-Barrois, Traité de paléont., i: 730.
1886. " Bull. U. S. geol. surv., No. 31: 18.
See also Lophonotus hystrix.

Pollyxenus (several species). See Polyxenus, Idem.

1797. **Polydesmus** ———. (Polydesmidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1856. **Menge.** Progr. petrischule Danzig, 1856: 6.

1798. **Polyxenus** ———. (Polyxenidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1845. **Berendt.** Bernst. befindl. organ. reste vorw., i: 56 (Pollyxenus).

1799. **Polyxenus** ——— (4 sp.). (Polyxenidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1856. **Menge.** Progr. petrischule Danzig, 1856: 6 (Pollyxenus).

1800. **Polyxenus caudatus.** (Polyxenidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1854. **Menge.** Koch-Berendt, Benrst. befindl. organ. reste vorw., i, th. ii: 12 (Pollyxenus).
1856. **Giebel.** Insect. d. vorwelt, 488.

1801. **Polyxenus colurus.** (Polyxenidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1854. **Menge.** Koch-Berendt, Bernst. befindl. organ. reste vorw., i, th. ii: 12 (Pollyxenus).
1856. **Giebel.** Insect. d. vorwelt, 488.

1802. **Polyxenus conformis.** (Polyxenidæ.)

Compared with P. lagurus.

Locality: Prussian amber. Horizon: Ligurian.

1854. **Koch-Berendt.** Berendt, Bernst. befindl. organ. reste vorw., i, th. ii: 11. *Pl.* 16, *fig.* 133 (Pollyxenus).
1856. **Giebel.** Insect. d. vorwelt, 487.

1803. **Polyxenus lophurus.** (Polyxenidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1854. **Menge.** Koch-Berendt, Bernst. befindl. organ. reste vorw., i, th. ii: 12 (Pollyxenus).
1856. **Giebel.** Insect. d. vorwelt, 488.

1804. Polyxenus ovalis. (Polyxenidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1854. Koch-Berendt. Berendt, Bernst. befindl. organ. reste vorw., i, th. ii: 12. *Pl.* 1, *figs.* 3, 1*, 2* (Pollyxenus).
1856. Giebel. Insect. d. vorwelt, 487–488.
1885. Scudder. Zittel, Handb. palaeont., i, th. ii: 731. *Fig.* 905.
1886. " Zittel-Barrois, Traité de paléont., ii: 730. *Fig.* 921.

1805. Scolopendra ——. (Scolopendridæ.)

Locality: Prussian amber. Horizon: Ligurian.

1835. Gravenhorst. Uebers. schles. gesellsch. vaterl. cult., 1834: 93.

1806. Scolopendra ——. (Scolopendridæ.)

Locality: Aix, France. Horizon: Ligurian.

1847. Hope. Trans. ent. soc. Lond., iv: 253.

1807. Scolopendra —— (2 sp.). (Scolopendridæ.)

Locality: Prussian amber. Horizon: Ligurian.

1856. Menge. Progr. petrischule Danzig, 1856: 6.

1808. Scolopendra ——. (Scolopendridæ.)

Locality: Prussian amber. Horizon: Ligurian.

1742. Sendel. Hist. succ., 172. *Pl.* 6, *figs.* 6*a*, *b*. (Millepedæ).
1825. Guerin. Dict. class. hist. nat., viii: 580 (Scolopendre).
1829. Serres. Geogn. terrains tert., 240.

1809. Scolopendra fossilis. (Scolopendridæ.)

Locality: Near Glarus, Switzerland. Horizon: ——.

1834. Keferstein. Naturg. erdkörp., ii: 370 (undescr.). (Simply quotes Aldrovandi.)

1810. Scolopendra proavita. (Scolopendridæ.)

Locality: Prussian amber. Horizon: Ligurian.

1854. Menge. Koch-Berendt, Bernst. befindl. organ. reste vorw., i, th. ii: 18–19.
1856. Giebel. Insect. d. vorwelt, 489.

1811. Scutigera illigeri.

Locality: Prussian amber. Horizon: Ligurian.

1856. Giebel. Insect. d. vorwelt, 491.
See also Cermatia illigeri, C. leachi.

ARACHNIDA.

1812. —— ——.

Locality: Aix, France. Horizon: Ligurian.

1837. Buckland. Geol. and min., ii: 79. *Pl.* 46″, *fig.* 12.
1838. " Géologie, éd. Agassiz, ii: expl. pl. 46″, p. 6. *Pl.* 46″, *fig.* 12.
1852. Quenstedt. Handb. petref. *Pl.* 21, *fig.* 25.
See also Theridium bucklandi.

1813. ——— ———.

Locality: Sinigaglia, Italy. Horizon: Tertiary.

1842. Procaccini. Nuov. ann. sc. nat., vii: 449.

1814. ——— ——— (2 sp.).

One of them compared with Epeira riparia.

Locality: Green River, Wyo. Horizon: Oligocene.

1878. Scudder. Bull. U. S. geol. surv. terr., iv: 776.
See also Epeira ——— Scudder, 1890, 89.

1815. ——— ———.

Locality: Gurnet Bay, Isle of Wight. Horizon: Bembridge Limestone.

1879. Woodward. Quart. journ. geol. soc. Lond., xxxv: 344.
1879. “ Geol. mag., n. s., v: 89.

1816. ——— ——— (tick). (Acarina.)

Locality: Green River, Wyo. Horizon: Oligocene.

1882. Scudder. Harv. Univ. bull., ii: 302.
1883. “ Ann. rep. U. S. geol. surv. terr., xii: 285.
See also Ixodes tertiarius.

1817. ——— ——— (1 or 2). (Agalenides.)

Locality: Florissant, Colo. Horizon: Oligocene.

1881. Scudder. Bull. U. S. geol. surv. terr., vi: 294.

1818. ——— ———. (Araneides.)

Locality: Prussian amber. Horizon: Ligurian.

1819. Schweigger. Beobacht. naturh. reisen, 111–112. *Pl.* 8, *figs.* 68, 68*a*.

1819. ——— ——— (1 or 2). (Attoidæ.)

Locality: Florissant, Colo. Horizon: Oligocene.

1881. Scudder. Bull. U. S. geol. surv. terr., vi: 294.

1820. ——— ———. (Attoidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1868. Smith. Quart. journ. sc., v: 184. *Pl.*, *fig.* 10.

1821. ——— ——— (several). (Drassides.)

Locality: Florissant, Colo. Horizon: Oligocene.

1881. Scudder. Bull. U. S. geol. surv. terr., vi: 294.

1822. ——— ——— (1 or 2). (Dysderides.)

Locality: Florissant, Colo. Horizon: Oligocene.

1881. Scudder. Bull. U. S. geol. surv. terr., vi: 294.

1823. ——— ——— (several). (Epeirides.)

Locality: Florissant, Colo. Horizon: Oligocene.

1881. Scudder Bull. U. S. geol. surv. terr., vi: 294.

1824. ——— ———. (Theridides.)

Locality: Prussian amber. Horizon: Ligurian.

1835. Gravenhorst. Uebers. schles. gesellsch. vaterl. cult., 1834: 92.

1825. ——— ——— (egg cocoon). (Theridides.)

Localities: Green River, Wyo.; Florissant, Colo. Horizon: Oligocene.

1878. Scudder. Bull. U S. geol. surv. terr., iv: 776.
1882. " Harv. univ. bull., ii: 303.
See also Aranea columbiæ.

1826. ——— ——— (several). (Theridides.)

Locality: Florissant, Colo. Horizon: Oligocene.

1881. Scudder. Bull. U. S. geol. surv. terr., vi: 294.

1827. ——— ——— (several). (Thomisides.)

Locality: Florissant, Colo. Horizon: Oligocene.

1881. Scudder. Bull. U. S. geol. surv. terr., vi: 294.

1828. Acantholophus ———. (Phalangioidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1856. Menge. Progr. petrischule Danzig, 1856: 11 (Acantolopus). (Perhaps identical with Cheiromachus).

1829. Acantholophus nemastomoides. (Phalangioidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1854. Menge. Koch-Berendt, Bernst. befindl. organ. reste vorw., i, th. ii: 102.
See also Gonyleptes nemastomoides.

1830. Acarus ———. (Acarina.)

Locality: Prussian amber. Horizon: Ligurian.

1845. Berendt. Bernst. befindl. organ. reste vorw., i: 56.

1831. Acarus ———. (Acarina.)

Locality: Oeningen, Baden. Horizon: Tortonian.

1865. Heer. Urwelt der Schweiz, 358 (milben).
1872. " Monde prim. Suisse, 439.
1876. " Prim. world Switz., ii: 12.
1879. " Urwelt der Schweiz, 2^{e} aufl., 382 (milben).

1832. Acarus ? ——— (leg). (Acarina.)

Locality: Bilin, Bavaria. Horizon: Tripoli earth.

1838. Turpin. Comptes rend. acad. sc. Paris, vii: 502.

1833. Acarus resinosus. (Acarina.)

Locality: Prussian amber. Horizon: Ligurian.

1822. Presl. Del. prag., i: 210.

1834. Acarus rhombeus. (Acarina.)

Locality: Prussian amber. Horizon: Ligurian.

1845. Koch-Berendt. Jahrb. min., 1845: 872.
1854. " Berendt, Bernst. befindl. organ. reste vorw., i, th. ii: 110. *Pl.* 13, *figs.* 113, 114.
1856. Giebel. Insect. d. vorwelt, 484.

1835. Actineda ——. (Trombididæ.)

Locality: Prussian amber. Horizon: Ligurian.

1845. Berendt. Bernst. befindl. organ. reste vorw., i: 56.

1836. Actineda malleator. (Trombididæ.)

Locality: Prussian amber. Horizon: Ligurian.

1854. Menge. Koch-Berendt, Bernst. befindl. organ reste vorw., i, th. ii: 107.
1856. Giebel. Insect d. vorwelt, 481.

1837. Actineda subnuda. (Trombididæ.)

Locality: Prussian amber. Horizon: Ligurian.

1854. Menge. Koch-Berendt, Bernst. befindl. organ. reste vorw., i, th. ii: 107.
1856. Giebel. Insect. d. vorwelt, 480–481.

1838. Actineda venustula. (Trombididæ.)

Locality: Prussian amber. Horizon: Ligurian.

1845. Koch-Berendt. Jahrb. min., 1845: 872.
1854. " Berendt, Bernst. befindl. organ. reste vorw., i, th. ii: 106–107. *Pl.* 13, *fig.* 106.
1856. Giebel. Insect. d. vorwelt, 480.

1839. Agalena ——. (Agalenides.)

Locality: Prussian amber. Horizon: Ligurian.

1845. Berendt. Bernst. befindl. organ. reste vorw., i: 56 (Agelena).

1840. Agalena tabida. (Agalenides.)

Locality: Prussian amber. Horizon: Ligurian.

1845. Koch-Berendt. Jahrb. min., 1845: 871 (Agelena).
1854. " Berendt, Bernst. befindl. organ. reste vorw., i, th. ii: 48.
1856. Giebel. Insect. d. vorwelt, 449.

Agelena tabida. See Agalena tabida.

1841. Amaurobius ——.

Locality: Prussian amber. Horizon: Ligurian.

1845. Berendt. Bernst. befindl. organ. reste vorw., i: 56.

1842. Amaurobius —— (3 sp.).

Locality: Prussian amber. Horizon: Ligurian.

1856. Menge. Progr. petrischule Danzig, 1856: 7.

1843. Amaurobius faustus.

Locality: Prussian amber. Horizon: Ligurian.

1845. Koch-Berendt. Jahrb. min., 1845: 872.
1854. " Berendt, Bernst. befindl. organ. reste vorw., i, th. ii: 57–58. *Pl.* 6, *fig.* 47.
1856. Giebel. Insect. d. vorwelt, 453–454.

1844. Amaurobius rimosus.

Locality: Prussian amber. Horizon: Ligurian.

1845. Koch-Berendt. Jahrb. min., 1845: 872.
1854. " Berendt, Bernst. befindl. organ. reste vorw., i, th. ii: 56–57. *Pl.* 6, *fig.* 46.
1856. Giebel. Insect. d. vorwelt, 453.

1845. Amaurobius spinimanus.

Locality: Prussian amber. Horizon: Ligurian.

1854. Menge. Koch-Berendt, Bernst. befindl. organ. reste vorw., i, th. ii: 58.
1856. " Progr. petrischule Danzig, 1856: 8.
1856. Giebel. Insect. d. vorwelt, 454.

1846. Amphiclotho breviuscula. (Urocteoidæ.)

Locality: Aix, France. Horizon: Ligurian.

1887. Gourret. Rec. zool. Suisse, iv: 465–467. *Pl.* 22, *fig.* 18.

1847. Amphithomisus barbatus. (Thomisides.)

Locality: Aix, France. Horizon: Ligurian.

1887. Gourret. Rec. zool. Suisse, iv: 447–449. *Pl.* 21, *fig.* 12.

1848. Amphitrogulus sternalis. (Opiliones.)

Locality: Aix, France. Horizon: Ligurian.

1887. Gourret. Rec. zool. Suisse, iv: 484–487. *Pl.* 23, *fig.* 26.

1849. Anandrus ——. (Therididea.)

Locality: Prussian amber. Horizon: Ligurian.

1856. Menge. Progr. petrischule Danzig, 1856: 7.

1850. Anatone hirsuta. (Drassides.)

Locality: Prussian amber. Horizon: Ligurian.

1856. Menge. Progr. petrischule Danzig, 1856: 8 (undescr.).

1851. Anatone marginata. (Drassides.)

Locality: Prussian amber. Horizon: Ligurian.

1854. Menge. Koch-Berendt, Bernst. befindl. organ. reste vorw., i, th. ii: 84.
1856. Giebel. Insect. d. vorwelt, 464.
1856. Menge. Progr. petrischule Danzig, 1856: 8.

1852. Anatone spinipes. (Drassides.)

Locality: Prussian amber. Horizon: Ligurian.

1854. Menge. Koch-Berendt, Bernst. befindl. organ. reste vorw., i, th. ii: 84.
1853–'56. Bronn. Lethæa geogn. 3^{e} aufl., iii: 627.
1856. Giebel. Insect. d. vorwelt, 464.
1856. Menge. Progr. petrischule Danzig, 1856: 8.
1870. Thorell. European spiders, i: 229.

1853. Androgeus ——. (Epeirides.)

Locality: Prussian amber. Horizon: Ligurian.

1845. Berendt. Bernst. befindl. organ. reste vorw., i: 56.

1854. Androgeus militaris. (Epeirides.)

Locality: Prussian amber. Horizon: Ligurian.

1845. Koch-Berendt. Jahrb. min., 1845: 871.
1854. " Berendt, Bernst. befindl. organ. reste vorw., i, th. ii: 28. *Pl.* 3, *fig.* 17.
1856. Giebel. Insect. d. vorwelt, 439.
1890. McCook. Amer. spiders, ii: 452. *Fig.* 374.

See also Gea militaris, etc.

1855. **Androgeus triqueter.** (Epeirides.)

Locality: Prussian amber. Horizon: Ligurian.

1845. Koch-Berendt. Jahrb. min., 1845: 871.
1854. " Berendt, Bernst. befindl. organ. reste vorw., i, th. ii: 29. *Pl.* 16, *fig.* 134.
1853–'56. Bronn. Lethæa geogn., 3e aufl., iii: 635–636. *Pl.* 42'*a*, *fig.* 11.
1856. Giebel. Insect. d. vorwelt, 439.
1870. Thorell. European spiders, i: 226.

See also Gea triquetra, etc.

1856. **Antopia** —— (3 sp.). (Epeirides.)

Locality: Prussian amber. Horizon: Ligurian.

1856. Menge. Progr. petrischule Danzig, 1856: 7.

1857. **Antopia obscura.** (Epeirides.)

Locality: Prussian amber. Horizon: Ligurian.

1854. Menge. Koch-Berendt, Bernst. befindl. organ. reste vorw., i, th. ii: 8 note, 24, 43.

See also Gea obscura, etc.

1858. **Antopia punctulata.** (Epeirides.)

Locality: Prussian amber. Horizon: Ligurian.

1854. Menge. Koch-Berendt, Bernst. befindl. organ. reste vorw., i, th. ii: 8, 43.
1853–'56. Bronn. Lethæa geogn., 3e aufl., iii: 657. *Pl.* 42'*a*, *fig.* 13.
1856. Giebel. Insect. d. vorwelt, 446–447.
1870. Thorell. European spiders, i: 225–226.

See also Mizalia punctulata.

1859. **Antopia tenera.** (Epeirides.)

Locality: Prussian amber. Horizon: Ligurian.

1854. Menge. Koch-Berendt, Bernst. befindl. organ. reste vorw., i, th. ii: 43 (undescr.).
1856. Giebel. Insect. d. vorwelt, 447.

1860. **Anyphæna** ——. (Drassides.)

Locality: Prussian amber. Horizon: Ligurian.

1845. Berendt. Bernst. befindl. organ. reste vorw., i: 56.

1861. **Anyphæna** ——. (Drassides.)

Locality: Prussian amber. Horizon: Ligurian.

1856. Menge. Progr. petrischule Danzig, 1856: 7.

1862. **Anyphæna** ——. (Drassides.)

Locality: Florissant, Colo. Horizon: Oligocene.

1882. Scudder. Harv. univ. bull., iii: 303.
1882. " Field nat., i: 62.
1883. " Ann. rep. U. S. geol. surv. terr., xii: 287.

See also Anyphæna interita.

1863. Anyphæna fuscata. (Drassides.)

Compared with A. accentuata.

Locality: Prussian amber. Horizon: Ligurian.

1845. Koch-Berendt. Jahrb. min., 1845: 1872.
1854. " Berendt, Bernst. befindl. organ. reste vorw., i, th. ii: 64–65. *Pl.* 6, *fig.* 56.
1856. Giebel. Insect. d. vorwelt, 457–458.

1864. Anyphæna interita. (Drassides.)

Locality: Florissant, Colo. Horizon: Oligocene.

1890. Scudder. Tert. ins. N. A., 67–68. *Pl.* 11, *fig.* 5.
See also Anyphæna ——— Scudder.

1865. Aranea ———. (Theridides.)

Locality: Copal. Horizon: Recent.

1776. Bloch. Beschäft. berl. gesellsch. naturf. freunde, ii: 167. *Pl.* 3, *fig.* 5.

1866. Aranea ———. (Theridides.)

Locality: Prussian amber. Horizon: Ligurian.

1831. Burmeister. Oken, Isis, 1831: 1100.

1867. Aranea ———. (Theridides.)

Locality: Prussian amber. Horizon: Ligurian.

1820. Schlotheim. Petrefactenk., 43.

1868. Aranea (Tegenaria) ———. (Theridides.)

Locality: Aix, France. Horizon: Ligurian.

1829. Serres. Géogn. terrains tert., 220.
See also A. fossilis.

1869. Aranea columbiæ. (Theridides.)

Localities: Quesnel, British Columbia; Green River, Wyo.; Florissant, Colo. Horizon: Oligocene.

1878. Scudder. Rep. progr. geol. surv. Can., 1876–'77: 463–464.
1878. " Add. ins.-fauna Quesnel, 7–8.
1878. " Rapp. opér. comm. géol. Can., 1876–'77: 521–522.
1890. " Tert. ins. N. A., 71–73. *Pl.* 2, *figs.* 1–2.
1890. McCook. Amer. spiders, ii: 459 (perhaps a Theridiosoma), 387–388.
See also ——— ——— (Theridides) Scudder, 1878.

1870. Aranea fossilis. (Theridides.)

Locality: Aix, France. Horizon: Ligurian.

1834. Keferstein. Naturg. erdkörp., ii: 370 (undescr.).
See also Aranea (Tegenaria) ——— Serres.

1871. Aranea fusca pilosa. (Theridides.)

Locality: Copal. Horizon: Recent.

1776. Bloch. Beschäft. berl. gesellsch. naturf. freunde, ii: 165. *Pl.* 3, *fig.* 2.

1872. Aranea globosa. (Theridides.)

Locality: Prussian amber. Horizon: Ligurian.

1822. Presl. Del. prag., i: 208.

1873. Aranea oblonga. (Therididea.)

Locality: Prussian amber. Horizon: Ligurian.

1822. Presl. Del. prag., i: 208–209.

1874. Archæa ———. (Archæoidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1845. Berendt. Bernst. befindl. organ. reste vorw., i: 56.

1875. Archæa ——— (5 sp.). (Archæoidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1856. Menge. Progr. petrischule Danzig, 1856: 9.

1876. Archæa conica. (Archæoidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1845. Koch-Berendt. Jahrb. min., 1845: 871.
1854. " Berendt, Bernst. befindl. organ. reste vorw., i, th. ii: 21. *Pl.* 2, *fig.* 10.
1856. Giebel. Insect. d. vorwelt, 434.

1877. Archæa hyperoptica. (Archæoidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1854. Menge. Koch-Berendt, Bernst. befindl. organ. reste vorw., i, th. ii: 22.
1856. Giebel. Insect. d. vorwelt, 435.

1878. Archæa incomta. (Archæoidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1854. Menge. Koch-Berendt, Bernst. befindl. organ. reste vorw., i, th. ii: 22.
1856. Giebel. Insect. d. vorwelt, 435.

1879. Archæa lævigata. (Archæoidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1845. Koch-Berendt. Jahrb. min., 1845: 871.
1854. " Berendt, Bernst. befindl. organ. reste vorw., i, th. ii: 21–22. *Pl.* 2, *fig.* 11.
1856. Giebel. Insect. d. vorwelt, 434.

1880. Archæa paradoxa. (Archæoidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1845. Koch-Berendt. Jahrb. min., 1845: 871.
1854. " Berendt, Bernst. befindl. organ. reste vorw., i, th. ii: 19–20. *Pl* 20, *figs.* 8, 9.
1853–'56. Bronn. Lethæa geogn., 3^e aufl., iii: 638. *Pl.* 42'*a*, *fig.* 14.
1856. Giebel. Insect. d. vorwelt, 433–434.
1870. Thorell. European spiders, i: 232.
1885. Scudder. Zittel, Handb. palaeont., i, th. ii: 742. *Fig.* 919.
1886. " Zittel-Barrois, Traité de paléont., ii: 741. *Fig.* 936.
1890. McCook. Amer. spiders, ii: 457, 467–468. *Figs.* 400, 401.

1881. Archæa pougneti. (Archæoidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1884. Simon. Note compl. Arch., 4–5. *Figs.* 1–2 on *p.* 2.
1884. " Ann. mus. civ. stor. nat. Gen., xx: 376–377. *Figs.* 1–2 on *p.* 374.

1882. Archæa sphinx. (Archæoidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1854.	Menge.	Koch-Berendt, Bernst. befindl. organ. reste vorw., i, th. ii: 22.
1856.	Giebel.	Insect. d. vorwelt, 435.

1883. Argyroneta ——. (Agalenides.)

Locality: Aix, France. Horizon: Ligurian.

1841.	Buckland.	Proc. geol. soc. Lond., iii: 505.
1842.	"	Ann. mag. nat. hist., ix: 163.

1884. Argyroneta ——. (Agalenides.)

Compared with A. aquatica.

Locality: Unterkirschburg, Germany. Horizon: Miocene.

1849.	Eser.	Jahresh. ver. vaterl. naturk. Württ., iv: 265.

1885. Argyroneta antiqua. (Agalenides.)

Localities: Stösschen, Rott, Germany. Horizon: Aquitanian.

1859.	Heyden.	Palaeontogr., viii: 1-2. *Pl.* 1, *fig.* 12.
1878.	Bertkau.	Verhandl. naturh. ver. preuss. rheinl., (4), v: 352-359. *Pl.* 5, *fig.* 1a-c.
1878.	"	Sitzungsb. niederrh. gesellsch. Bonn, 1878: 70-71.
1885.	Scudder.	Ziittel, Handb. palaeont., i, th. ii: 742. *Fig.* 922.
1886.	"	Zittel-Barrois, Traité de paléont., ii: 742. *Fig.* 939.
1886.	"	Bull. U. S. geol. surv., No. 31: 30.

See also Elvina antiqua.

1886. Argyroneta ? longipes. (Agalenides.)

Compared with A. aquatica Deg.

Locality: Oeningen, Baden. Horizon: Tortonian.

1865.	Heer.	Urwelt der Schweiz, 356, 357. *Fig.* 214.
1870.	Thorell	European spiders, i: 224 (not an Argyroneta).
1872.	Heer.	Monde prim. Suisse, 436, 438. *Fig.* 214 on *p.* 437.
1876.	"	Prim. world Switz., ii: 10, 11. *Fig.* 214.
1879.	"	Urwelt der Schweiz, 2^{e} aufl., 380, 382. *Fig.* 249 on *p.* 381.

1887. Ariames gabrieli. (Therididea.)

Compared with A. nasicus Sim.

Locality: Aix, France. Horizon: Ligurian.

1887.	Gourret.	Rec. zool. Suisse, iv: 455-457. *Pl.* 23, *fig.* 23.

1888. Artamus radiatus. (Thomisides.)

Locality: Prussian amber. Horizon: Ligurian.

1854.	Menge.	Koch-Berendt, Bernst. befindl. organ. reste vorw., i, th. ii: 81.
1856.	Giebel.	Insect. d. vorwelt, 464.

See also Syphax radiatus.

1889. Arytæna troguloides. (Trombididæ.)

Locality: Prussian amber. Horizon: Ligurian.

1854.	Menge.	Koch-Berendt, Bernst. befindl. organ. reste vorw., i, th. ii: 106.
1853-'56.	Bronn.	Lethæa geogn., 3^{e} aufl., iii: 624.
1856.	Giebel	Insect. d. vorwelt, 480.

1890. **Athera exilis.** (Thomisides.)

Locality: Prussian amber. Horizon: Ligurian.

1854. Menge. Koch-Berendt, Bernst. befindl. organ. reste vorw., i, th. ii : 94 (undescr.).
1853–'56. Bronn. Lethæa geogn., 3^e aufl., iii : 639.
1856. Giebel. Insect. d. vorwelt, 469.
1856. Menge. Progr. petrischule Danzig, 1856 : 9 (undescr.).
1870. Thorell. European spiders, i : 231.

1891. **Attoides eresiformis.** (Attoidæ.)

Locality: Aix, France. Horizon: Ligurian.

1877. Brongniart. Ann. soc. ent. Fr., (5), vii : 221–224. *Pl.* 7^1, *figs.* 7–10.
1878. Girard. La nature, vi : 144. *Figs.* 1–4.
1885. Scudder. Zittel, Handb. palaeont., i, th. ii : 741. *Fig.* 918.
1886. " Zittel-Barrois, Traité de paléont., ii : 741. *Fig.* 935.
1886. " Bull. U. S. geol. surv., No. 31 : 29.

1892. **Attopsis hirsutus.** (Attoidæ.)

Locality: Aix, France. Horizon: Ligurian.

1887. Gourret. Rec. zool. Suisse, iv : 441–443. *Pl.* 23, *fig.* 27.

1893. **Attus fossilis.** (Attoidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1805. Walckenaer. Tabl. aran., 25 (name only).
1837. " Hist. nat. ins., Apt., i : 462.

1894. **Bdella ——.** (Bdellidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1845. Berendt. Bernst. befindl. organ. reste vorw., i : 56.

1895. **Bdella bicincta.** (Bdellidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1854. Menge. Koch-Berendt, Bernst. befindl. organ. reste vorw., i, th. ii : 108.
1856. Giebel. Insect. d. vorwelt, 482.
1884. Karsch. Berl. entom. zeitschr., xxviii : 175.

1896. **Bdella bombycina.** (Bdellidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1854. Menge. Koch-Berendt, Bernst. befindl. organ. reste vorw., i, th. i : 108.
1856. Giebel. Insect. d. vorwelt, 482.

1897. **Bdella lata.** (Bdellidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1845. Koch-Berendt. Jahrb. min., 1845 : 872.
1854. " Berendt, Bernst. befindl. organ. reste vorw., i, th. ii : 108. *Pl.* 13, *fig.* 110.
1856. Giebel. Insect. d. vorwelt, 482.

1898. **Bdella obconica.** (Bdellidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1854. Menge. Koch-Berendt, Bernst. befindl. organ. reste vorw., i, th. ii : 108, 124.
1856. Giebel. Insect. d. vorwelt, 482.
1884. Karsch. Berl. entom. zeitschr., xxviii : 175.

1899. Buthus ———. (Scorpiones.)

Locality: ? Horizon: Tertiary.

1846. Giebel. Paläozool., 267.

1900. Cercidiella aquisextana. (Epeirides.)

Locality: Aix, France. Horizon: Ligurian.

1887. Gourret. Rec. zool. Suisse, iv: 452–453. *Pl.* 21, *fig.* 8.

Cheiridion hartmanni. See Cheiridium hartmanni.

1901. Cheiridium hartmanni. (Chelonethi.)

Locality: Prussian amber. Horizon: Ligurian.

1855. Menge. Scheerenspinnen, 38. *Pl.* 5, *figs.* 12, 13 (given variously as Chelifer and Cheiridion).

1870. Hagen. Proc. Bost. soc. nat. hist., xiii: 264.

See also Chelifer hartmanni.

Cheiromachus ? ——— See Acantolophus ———

1902. Cheiromachus coriaceus. (Phalangioidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1854. Menge. Koch-Berendt, Bernst. befindl. organ. reste vorw., i, th. ii: 102.

1853–'56. Bronn. Lethæa geogn., 3^e^ aufl., iii: 624.

1856. Giebel. Insect. d. vorwelt, 477.

1903. Chelifer ———. (Chelonethi.)

Locality: Prussian amber. Horizon: Ligurian.

1845. Berendt. Bernst. befindl. organ. reste vorw., i: 56.

1904. Chelifer ———. (Chelonethi.)

Compared with C. hemprichi Koch.

Locality: Prussian amber. Horizon: Ligurian.

1862. Giebel. Zeitschr. ges. naturw., xx: 321.

1905. Chelifer ———. (Chelonethi.)

Locality: Prussian amber. Horizon: Ligurian.

1835. Gravenhorst. Uebers. schles. gesellsch. vaterl. cult., 1834: 92.

1906. Chelifer ———. (Chelonethi.)

Locality: Aix, France. Horizon: Ligurian.

1847. Hope. Trans. ent. soc. Lond., iv: 253.

1907. Chelifer ———. (Chelonethi.)

Locality: Prussian amber. Horizon: Ligurian.

1819. Schweigger. Beobacht. naturh. reisen, 113.

1834. Keferstein. Naturg. erdkörp., i: 370 (or Obisium).

1908. Chelifer berendtii. (Chelonethi.)

Locality: Prussian amber. Horizon: Ligurian.

1855. Menge. Scheerenspinnen, 32–33. *Pl.* 4, *fig.* 7.

1870. Hagen. Proc. Bost. soc. nat. hist., xiii: 264.

See also Dichela berendtii.

1909. Chelifer ehrenbergi. (Chelonethi.)

Compared with C. museorum.

Locality: Prussian amber. Horizon: Ligurian.

1845. Koch-Berendt. Jahrb. min., 1845: 872.
1854. " Berendt, Bernst. befindl. organ. reste vorw., i, th. ii: 95. *Pl.* 10, *fig.* 95.
1856. Giebel. Insect. d. vorwelt, 472.
1870. Hagen. Proc. Bost. soc. nat. hist., xiii: 265.

1910. Chelifer hartmanni. (Chelonethi.)

Locality: Prussian amber. Horizon: Ligurian.

1854. Menge. Koch-Berendt, Bernst. befindl. organ. reste vorw., i, th. ii: 96.
1856. Giebel. Insect. d. vorwelt, 473.
See also Cheiridium hartmanni.

1911. Chelifer hemprichi. (Chelonethi.)

Compared with C. museorum, C. cancroides.

Locality: Prussian amber. Horizon: Ligurian.

1845. Koch-Berendt. Jahrb. min., 1845: 872.
1854. " Berendt, Bernst. befindl. organ. reste vorw., i, th. ii: 94–95. *Pl.* 10, *fig.* 94.
1855. Menge. Scheerenspinnen, 34. *Pl.* 4, *fig.* 8.
1856. Giebel. Insect. d. vorwelt, 472.
1870. Hagen. Proc. Bost. soc. nat. hist., xiii: 266.
1885. Scudder. Zittel, Handb. palaeont., i, th. ii: 734 (hemprichti). *Fig.* 908.
1886. " Zittel-Barrois, Traité de paléont., ii: 733 (hemprichtii). *Fig.* 924.

Chelifer hemprichti. See Chelifer hemprichi.

1912. Chelifer klemanni. (Chelonethi.)

Locality: Prussian amber. Horizon: Ligurian.

1845. Koch-Berendt. Jahrb. min., 1845: 872.
1854. " Berendt, Bernst. befindl. organ. reste vorw., i, th. ii: 95–96. *Pl.* 16, *fig.* 143.
1855. Menge. Scheerenspinnen, 21, 34–35. *Pl.* 5, *fig.* 9.
1856. Giebel. Insect. d. vorwelt, 472.
1870. Hagen. Proc. Bost. soc. nat. hist., xiii: 266.
See also Obisium rathkei.

1913. Chelifer sieboldii. (Chelonethi.)

Locality: Prussian amber. Horizon: Ligurian.

1855. Menge. Scheerenspinnen, 35–36. *Pl.* 5, *fig.* 10.
1870. Hagen. Proc. Bost. soc. nat. hist., xiii: 267.
See also Obisium sieboldii.

Chelifer wiegandi. See Chelifer wigandi.

1914. Chelifer wigandi. (Chelonethi.)

Locality: Prussian amber. Horizon: Ligurian.

1854. Menge. Koch-Berendt, Bernst. befindl. organ. reste vorw., i, th. ii: 96.
1856. Giebel. Insect. d. vorwelt, 472 (wiegandi).
See also Chernes wigandi.

1915. Chelignathus kochii.

Locality: Prussian amber. Horizon: Ligurian.

1854. Menge. Koch-Berendt, Bernst. befindl. organ. reste vorw., i, th. ii: 97.
1853-'56. Bronn. Lethæa geogn., 3^e aufl., iii: 624-625.
1856. Giebel. Insect. d. vorwelt, 473.
See also Chthonius kochii.

1916. Chernes wigandi. (Chelonethi.)

Locality: Prussian amber. Horizon: Ligurian.

1855. Menge. Scheerenspinnen, 41-42. *Pl.* 5, *fig.* 16.
1870. Hagen. Proc. Bost. soc. nat hist., xiii: 268.
See also Chelifer wigandi.

1917. Cheyletus ——. (Bdellidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1845. Berendt. Bernst. befindl. organ. reste vorw., i: 56.

1918. Cheyletus portentosus. (Bdellidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1845. Koch-Berendt. Jahrb. min., 1845: 872.
1854. " Berendt, Bernst. befindl. organ. reste vorw., i, th. ii: 109. *Pl.* 13, *fig.* 111.
1856. Giebel. Insect. d. vorwelt, 483.

1919. Chthonius kochii. (Chelonethi.)

Locality: Prussian amber. Horizon: Ligurian.

1855. Menge. Scheerenspinnen, 25-26. *Pl.* 4, *fig.* 2.
1870. Hagen. Proc. Bost. soc. nat. hist., xiii: 268.
See also Chelignathus kochii.

1920. Clostes priscus. (Theraphosoidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1869. Menge. Scorp. (Schrift. naturf. gesellsch. Danzig, ii: pt. 2), 7. *Figs. a, b.*
1870. Thorell. European spiders, i: 230-231.

1921. Clubiona ——. (Drassides.)

Locality: Prussian amber. Horizon: Ligurian.

1845. Berendt. Bernst. befindl. organ. reste vorw., i: 56.

1922. Clubiona —— (4 sp.). (Drassides.)

Locality: Prussian amber. Horizon: Ligurian.

1856. Menge. Progr. petrischule Danzig, 1856: 7.

1923. Clubiona —— (4 sp.) (Drassides.)

Locality: Florissant, Colo. Horizon: Oligocene.

1882. Scudder. Harv. univ. bull., ii: 303.
1882. " Field nat., i: 62.
1883. " Ann. rep. U. S. geol. surv. terr., xii: 287.

1924. Clubiona arcana. (Drassides.)

Compared with C. sericea, C. lanata.

Locality: Florissant, Colo. Horizon: Oligocene.

1890. Scudder. Tert. ins. N. A., 64. *Pl.* 11, *fig.* 4.

1925. Clubiona attenuata. (Drassides.)

Compared with C. amaranta.

Locality: Prussian amber. Horizon: Ligurian.

1845. Koch-Berendt. Jahrb. min., 1845: 872.
1854. " Berendt, Bernst. befindl. organ. reste vorw., i, th. ii: 65–66. *Pl.* 7, *fig.* 57.
1856. Giebel. Insect. d. vorwelt, 458.
1890. McCook. Amer. spiders, ii: 467. *Fig.* 397.

1926. Clubiona eseri. (Drassides.)

Compared with C. lanata K. and B.

Locality: Oeningen, Baden. Horizon: Tortonian.

1865. Heer. Urwelt der Schweiz, 356, 357. *Fig.* 213.
1870. Thorell. European spiders, i: 224 (not a Clubiona).
1872. Heer. Monde prim. Suisse, 436, 438. *Fig.* 213, on *p.* 437.
1876. " Prim. world Switz., ii: 10, 12. *Fig.* 213.
1879. " Urwelt der Schweiz, 2e aufl., 380, 382. *Fig.* 248, on *p.* 381.

1927. Clubiona eversa. (Drassides.)

Compared with C. tomentosa K. and B.

Locality: Florissant, Colo. Horizon: Oligocene.

1890. Scudder. Tert. ins. N. A., 63. *Pl.* 11, *fig.* 22.

1928. Clubiona lanata. (Drassides.)

Locality: Prussian amber. Horizon: Ligurian.

1845. Koch-Berendt. Jahrb. min., 1845: 872.
1854. " Berendt, Bernst. befindl. organ. reste vorw., i, th. ii: 67–68. *Pl.* 7, *fig.* 60.
1856. Giebel. Insect. d. vorwelt, 459.
1870. Thorell. European spiders, i: 230 (not a Clubiona).

1929. Clubiona latebrosa. (Drassides.)

Compared with C. attenuata K. and B.

Locality: Florissant, Colo. Horizon: Oligocene.

1890. Scudder. Tert. ins. N. A., 65. *Pl.* 11, *fig.* 18.

1930. Clubiona latifrons. (Drassides.)

Locality: Prussian amber. Horizon: Ligurian.

1854. Menge. Koch-Berendt, Bernst. befindl. organ. reste vorw., i, th. ii: 69 (undescr.).
1856. Giebel. Insect. d. vorwelt, 459.

1931. Clubiona microphthalma. (Drassides.)

Locality: Prussian amber. Horizon: Ligurian.

1845. Koch-Berendt. Jahrb. min., 1845: 872.
1854. " Berendt, Bernst. befindl. organ. reste vorw., i, th. ii: 66. *Pl.* 7, *fig.* 58.
1856. Giebel. Insect. d. vorwelt, 458.

1932. Clubiona ostentata. (Drassides.)
Compared with C. microphthalma K. and B.
Locality: Florissant, Colo. Horizon: Oligocene.
1890. Scudder. Tert. ins. N. A., 65–66. *Pl.* 11, *fig.* 24.

1933. Clubiona pubescens. (Drassides.)
Locality: Prussian amber. Horizon: Ligurian.
1845. Koch-Berendt. Jahrb. min., 1845: 872.
1854. " Berendt, Bernst. befindl. organ. reste vorw., i, th. ii: 69. *Pl.* 7, *fig.* 62.
1856. Giebel. Insect. d. vorwelt, 459.

1934. Clubiona sericea. (Drassides.)
Locality: Prussian amber. Horizon: Ligurian.
1845. Koch-Berendt. Jahrb. min., 1845: 872.
1854. " Berendt, Bernst. befindl. organ. reste vorw., i, th. ii: 67. *Pl.* 7, *fig.* 59.
1856. Giebel. Insect. d. vorwelt, 458–459.

1935. Clubiona tomentosa. (Drassides.)
Locality: Prussian amber. Horizon: Ligurian.
1845. Koch-Berendt. Jahrb. min., 1845: 872.
1854. " Berendt, Bernst. befindl. organ. reste vorw., i, th. ii: 68. *Pl.* 7, *fig.* 61.
1856. Giebel. Insect. d. vorwelt, 459.

1936. Clubionella antiqua. (Drassides.)
Locality: Aix, France. Horizon: Ligurian.
1887. Gourret. Rec. zool. Suisse, iv: 471–474. *Pl.* 23, *fig.* 25.

1937. Clya ——. (Theridides.)
Locality: Prussian amber. Horizon: Ligurian.
1845. Berendt. Bernst. befindl. organ. reste vorw., i: 56.

1938. Clya ——. (Theridides.)
Locality: Prussian amber. Horizon: Ligurian.
1856. Menge. Progr. petrischule Danzig, 1856: 7.

1939. Clya lugubris. (Theridides.)
Locality: Prussian amber. Horizon: Ligurian.
1845. Koch-Berendt. Jahrb. min., 1845: 871.
1854. " Berendt, Bernst. befindl. organ. reste vorw., i, th. ii: 31. *Pl.* 3, *fig.* 19.
1853-'56. Bronn. Lethæa geogn., 3^{e} aufl., iii: 633–634. *Pl.* 42'a, *fig.* 9.
1856. Giebel. Insect. d. vorwelt, 440–441.
1870. Thorell. European spiders, i: 227.

1940. Clythia ——. (Thomisides.)
Locality: Prussian amber. Horizon: Ligurian.
1845. Berendt. Bernst. befindl. organ. reste vorw., i: 56.

1941. Clythia —— (3 sp.). (Thomisides.)
Locality: Prussian amber. Horizon: Ligurian.
1856. Menge. Progr. petrischule Danzig, 1856: 7.

1942. Clythia alma. (Thomisides.)

Locality: Prussian amber. Horizon: Ligurian.

1845. Koch-Berendt. Jahrb. min., 1845: 871.
1854. " Berendt, Bernst. befindl. organ. reste vorw., i, th. ii: 45–46. *Pl.* 5, *fig.* 35.
1856. Giebel. Insect. d. vorwelt, 447.
1870. Thorell. European spiders, i: 231.

1943. Clythia funesta. (Thomisides.)

Locality: Prussian amber. Horizon: Ligurian.

1854. Menge. Koch-Berendt, Bernst. befindl. organ. reste vorw., i, th. ii: 50.
See also Textrix funesta.

1944. Clythia gracilenta. (Thomisides.)

Locality: Prussian amber. Horizon: Ligurian.

1854. Menge. Koch-Berendt, Bernst. befindl. organ. reste vorw., i, th. ii: 46.
1856. Giebel. Insect. d. vorwelt, 447.

1945. Clythia leptocarena. (Thomisides.)

Locality: Prussian amber. Horizon: Ligurian.

1854. Menge. Koch-Berendt, Bernst. befindl. organ. reste vorw., i, th. ii: 46.
1856. Giebel. Insect. d. vorwelt, 447.

1946. Clythia lineata. (Thomisides.)

Locality: Prussian amber. Horizon: Ligurian.

1854. Menge. Koch-Berendt, Bernst. befindl. organ. reste vorw., i, th. ii: 49.
See also Textrix lineata.

1947. Corynitis ——— (2 sp.). (Theridides.)

Locality: Prussian amber. Horizon: Ligurian.

1856. Menge. Progr. petrischule Danzig, 1856: 7.

1948. Corynitis spinosa. (Theridides.)

Locality: Prussian amber. Horizon: Ligurian.

1854. Menge. Koch-Berendt, Bernst. befindl. organ. reste vorw., i, th. ii: 30.
1853–'56. Bronn. Lethæa geogn., 3^e aufl., iii: 635.
1856. Giebel. Insect. d. vorwelt, 440.
1870. Thorell. European spiders, i: 226–227.

1949. Corynitis undulata. (Theridides.)

Locality: Prussian amber. Horizon: Ligurian.

1854. Menge. Koch-Berendt, Bernst. befindl. organ. reste vorw., i, th. ii: 30.
1853–'56. Bronn. Lethæa geogn., 3^e aufl., iii: 635.
1856. Giebel. Insect. d. vorwelt, 440.

1950. Dichela berendtii. (Chelonethi.)

Locality: Prussian amber. Horizon: Ligurian.

1854. Menge. Koch-Berendt, Bernst. befindl. organ. reste vorw., i, th. ii: 96 (undescr.).
1853–'56. Bronn. Lethæa geogn., 3^e aufl., iii: 625.
1856. Giebel Insect. d. vorwelt, 473.
See also Chelifer berendtii.

1951. Dielacata superba. (Theridides.)

Locality: Prussian amber. Horizon: Ligurian.

1854. Menge. Koch-Berendt, Bernst. befindl. organ. reste vorw., i, th. ii: 94 (undescr.).
1853–'56. Bronn. Lethæa geogn., 3e aufl., iii: 638.
1856. Giebel. Insect. d. vorwelt., 469.
1856. Menge. Progr. petrischule Danzig, 1856: 9.
1870. Thorell. European spiders, i: 227.

1952. Drassus ——. (Drassides.)

Locality: Prussian amber. Horizon: Ligurian.

1856. Menge. Progr. petrischule Danzig, 1856: 8.

1953. Drassus oblongus. (Drassides.)

Locality: Prussian amber. Horizon: Ligurian.

1854. Menge. Koch-Berendt, Bernst. befindl. organ. reste vorw., i, th. ii: 69 (undescr.).
1856. Giebel. Insect. d. vorwelt, 459.

1954. Dysdera ——. (Dysderides.)

Locality: Prussian amber. Horizon: Ligurian.

1845. Berendt. Bernst. befindl. organ. reste vorw., i: 56.

1955. Dysdera glabrata. (Dysderides.)

Locality: Prussian amber. Horizon: Ligurian.

1854. Menge. Koch-Berendt, Bernst. befindl. organ. reste vorw., i, th. ii: 74.
1856. Giebel. Insect. d. vorwelt, 462.

1956. Dysdera hippopodium. (Dysderides.)

Locality: Prussian amber. Horizon: Ligurian.

1854. Menge. Koch-Berendt, Bernst. befindl. organ. reste vorw., i, th. ii: 74.
1856. Giebel. Insect. d. vorwelt, 462.

1957. Dysdera scrobiculata. (Dysderides.)

Locality: Prussian amber. Horizon: Ligurian.

1854. Menge. Koch-Berendt, Bernst. befindl. organ. reste vorw., i, th. ii: 74.
1856. Giebel. Insect. d. vorwelt, 462.

1958. Dysdera tersa. (Dysderides.)

Locality: Prussian amber. Horizon: Ligurian.

1845. Koch-Berendt. Jahrb. min., 1845: 872.
1854. " Berendt, Bernst. befindl. organ. reste vorw., i, th. ii: 74. *Pl.* 8, *fig.* 68.
1856. Giebel. Insect. d. vorwelt, 461–462 (thersa).

Dysdera thersa. See Dysdera tersa.

1959. Elvina antiqua. (Agalenides.)

Locality: Rott, Rhenish Prussia. Horizon: Aquitanian.

1870. Thorell. European spiders, i: 223–224.
See also Argyroneta antiqua.

1960. Entomocephalus formicoides.

Locality: Prussian amber. Horizon: Ligurian.

1819. Schweigger. Beobacht. naturh. reisen, 111–112. *Pl.* 8, *figs.* 68, 68*a*.
1829. Holl. Handb. d. petref., 178–179.
1846. Geinitz. Grundr. versteinerungsk., 192.

1961. Eoatypus woodwardii. (Theraphosoidæ.)

Locality: Gurnet Bay, Isle of Wight. Horizon: Eocene.

1883. McCook. Proc. acad. nat. sc. Phila., 1888: 200–202. *Figs.* 1, 2.
1890. " Amer. spiders, ii: 456–457. *Figs.* 383, 384.

1962. Epeira —— (7 sp.). (Epeirides.)

Locality: Florissant, Colo. Horizon: Oligocene.

1882. Scudder. Harv. univ. bull., ii: 303.
1882. " Field nat., i: 63.
1883. " Ann. rep. U. S. geol. surv. terr., xii: 288.

1963. Epeira ——. (Epeirides.)

Locality: Florissant, Colo. Horizon: Oligocene.

1890. Scudder. Tert. ins. N. A., 88–89. *Pl.* 11, *fig.* 1.

1964. Epeira ——. (Epeirides.)

Compared with E. riparia.

Locality: Green River, Wyo. Horizon: Oligocene.

1890. Scudder. Tert. ins. N. A., 89, first species.
See also —— —— Scudder.

1965. Epeira ——. (Epeirides.)

Locality: Green River, Wyo. Horizon: Oligocene.

1890. Scudder. Tert. ins. N. A., 89, second species.
See also —— —— Scudder.

1966. Epeira abscondita. (Epeirides.)

Locality: Florissant, Colo. Horizon: Oligocene.

1890. Scudder. Tert. ins. N. A., 84–85. *Pl.* 11, *fig.* 7.

1967. Epeira cinefacta. (Epeirides.)

Locality: Florissant, Colo. Horizon: Oligocene.

1890. Scudder. Tert. ins. N. A., 85–86. *Pl.* 11, *fig.* 16.

1968. Epeira delita. (Epeirides.)

Locality: Florissant, Colo. Horizon: Oligocene.

1890. Scudder. Tert. ins. N. A., 85. *Pl.* 11, *fig.* 6.

1969. Epeira emertoni. (Epeirides.)

Locality: Florissant, Colo. Horizon: Oligocene.

1890. Scudder. Tert. ins. N. A., 87–88. *Pl.* 11, *figs.* 15, 19.

1970. Epeira eocæna. (Epeirides.)

Locality: Prussian amber. Horizon: Ligurian.

1856. Giebel. Insect. d. vorwelt, 437.

1951. Dielacata superba. (Theridides.)

Locality: Prussian amber. Horizon: Ligurian.

1854. Menge. Koch-Berendt, Bernst. befindl. organ. reste vorw., i, th. ii: 94 (undescr.).
1853–'56. Bronn. Lethæa geogn., 3^{e} aufl., iii: 638.
1856. Giebel. Insect. d. vorwelt., 469.
1856. Menge. Progr. petrischule Danzig, 1856: 9.
1870. Thorell. European spiders, i: 227.

1952. Drassus ——. (Drassides.)

Locality: Prussian amber. Horizon: Ligurian.

1856. Menge. Progr. petrischule Danzig, 1856: 8.

1953. Drassus oblongus. (Drassides.)

Locality: Prussian amber. Horizon: Ligurian.

1854. Menge. Koch-Berendt, Bernst. befindl. organ. reste vorw., i, th. ii: 69 (undescr.).
1856. Giebel. Insect. d. vorwelt, 459.

1954. Dysdera ——. (Dysderides.)

Locality: Prussian amber. Horizon: Ligurian.

1845. Berendt. Bernst. befindl. organ. reste vorw., i: 56.

1955. Dysdera glabrata. (Dysderides.)

Locality: Prussian amber. Horizon: Ligurian.

1854. Menge. Koch-Berendt, Bernst. befindl. organ. reste vorw., i, th. ii: 74.
1856. Giebel. Insect. d. vorwelt, 462.

1956. Dysdera hippopodium. (Dysderides.)

Locality: Prussian amber. Horizon: Ligurian.

1854. Menge. Koch-Berendt, Bernst. befindl. organ. reste vorw., i, th. ii: 74.
1856. Giebel. Insect. d. vorwelt, 462.

1957. Dysdera scrobiculata. (Dysderides.)

Locality: Prussian amber. Horizon: Ligurian.

1854. Menge. Koch-Berendt, Berust. befindl. organ. reste vorw., i, th. ii: 74.
1856. Giebel. Insect. d. vorwelt, 462.

1958. Dysdera tersa. (Dysderides.)

Locality: Prussian amber. Horizon: Ligurian.

1845. Koch-Berendt. Jahrb. min., 1845: 872.
1854. " Berendt, Bernst. befindl. organ. reste vorw., i, th. ii: 74. *Pl.* 8, *fig.* 68.
1856. Giebel. Insect. d. vorwelt, 461–462 (thersa).

Dysdera thersa. See Dysdera tersa.

1959. Elvina antiqua. (Agalenides.)

Locality: Rott, Rhenish Prussia. Horizon: Aquitanian.

1870. Thorell. European spiders, i: 223–224.
See also Argyroneta antiqua.

1960. Entomocephalus formicoides.

Locality: Prussian amber. Horizon: Ligurian.

1819. Schweigger. Beobacht. naturh. reisen, 111-112. *Pl.* 8, *figs.* 68, 68*a*.
1829. Holl. Handb. d. petref., 178–179.
1846. Geinitz. Grundr. versteinerungsk., 192.

1961. Eoatypus woodwardii. (Theraphosoidæ.)

Locality: Gurnet Bay, Isle of Wight. Horizon: Eocene.

1888. McCook. Proc. acad. nat. sc. Phila., 1888: 200–202. *Figs.* 1, 2.
1890. " Amer. spiders, ii: 456–457. *Figs.* 383, 384.

1962. Epeira ——— (7 sp.). (Epeirides.)

Locality: Florissant, Colo. Horizon: Oligocene.

1882. Scudder. Harv. univ. bull., ii: 303.
1882. " Field nat., i: 63.
1883. " Ann. rep. U. S. geol. surv. terr., xii: 288.

1963. Epeira ———. (Epeirides.)

Locality: Florissant, Colo. Horizon: Oligocene.

1890. Scudder. Tert. ins. N. A., 88–89. *Pl.* 11, *fig.* 1.

1964. Epeira ———. (Epeirides.)

Compared with E. riparia.

Locality: Green River, Wyo. Horizon: Oligocene.

1890. Scudder. Tert. ins. N. A., 89, first species.
See also ——— ——— Scudder.

1965. Epeira ———. (Epeirides.)

Locality: Green River, Wyo. Horizon: Oligocene.

1890. Scudder. Tert. ins. N. A., 89, second species.
See also ——— ——— Scudder.

1966. Epeira abscondita. (Epeirides.)

Locality: Florissant, Colo. Horizon: Oligocene.

1890. Scudder. Tert. ins. N. A., 84–85. *Pl.* 11, *fig.* 7.

1967. Epeira cinefacta. (Epeirides.)

Locality: Florissant, Colo. Horizon: Oligocene.

1890. Scudder. Tert. ins. N. A., 85–86. *Pl.* 11, *fig.* 16.

1968. Epeira delita. (Epeirides.)

Locality: Florissant, Colo. Horizon: Oligocene.

1890. Scudder. Tert. ins. N. A., 85. *Pl.* 11, *fig.* 6.

1969. Epeira emertoni. (Epeirides.)

Locality: Florissant, Colo. Horizon: Oligocene.

1890. Scudder. Tert. ins. N. A., 87–88. *Pl.* 11, *figs.* 15, 19.

1970. Epeira eocæna. (Epeirides.)

Locality: Prussian amber. Horizon: Ligurian.

1856. Giebel. Insect. d. vorwelt, 437.

1971. Epeira eogena. (Epeirides.)

Locality: Prussian amber. Horizon: Ligurian.

1854. Menge. Koch-Berendt, Bernst. befindl. organ. reste vorw., i, th. ii: 24 (undescr.).
1856. " Progr. petrischule Danzig, 1856: 7.

1972. Epeira krantzii. (Epeirides.)

Locality: Siebengebirge, Germany. Horizon: Aquitanian.

1870. Thorell. European spiders, i: 223.
See also Gea krantzii.

1973. Epeira meekii. (Epeirides.)

Compared with E. tröschelii.

Locality: Florissant. Colo. Horizon: Oligocene.

1890. Scudder. Tert. ins. N. A., 83-84. *Pl.* 11, *figs.* 2, 17.
1890. McCook. Amer. spiders, ii: 453. *Fig.* 375.

1974. Epeira molassica. (Epeirides.)

Locality: Oeningen, Baden. Horizon: Tortonian.

1865. Heer. Urwelt der Schweiz, 356. *Fig.* 221.
1872. " Monde prim. Suisse, 436. *Fig.* 221 on *p.* 437.
1876. " Prim. world Switz., ii: 9. *Fig.* 221 on *p.* 10.
1879. " Urwelt der Schweiz, 2^e aufl., 380. *Fig.* 256 on *p.* 381.
1890. McCook. Amer. spiders, ii: 449.

1975. Epeira tröschelii. (Epeirides.)

Locality: Rott, Rhenish Prussia. Horizon: Aquitanian.

1878. Bertkau. Verhandl. naturh. ver. preuss. rheinl., (4), v: 348-349. *Pl.* 5, *fig.* 4.

1976. Epeira vulcanalis. (Epeirides.)

Locality: Florissant, Colo. Horizon: Oligocene.

1890. Scudder. Tert. ins. N. A., 86-87.

1977. Epeiridion ——. (Epeirides.)

Locality: Prussian amber. Horizon: Ligurian.

1856. Menge. Progr. petrischule Danzig, 1856: 6.

1978. Epeiridion femoratum. (Epeirides.)

Locality: Prussian amber. Horizon: Ligurian.

1854. Menge. Koch-Berendt, Bernst. befindl. organ. reste vorw., i, th. ii: 24 (undescr.).
1856. Giebel. Insect. d. vorwelt, 437.

1979. Eresoides orbicularis. (Eresoidæ.)

Locality: Aix, France. Horizon: Ligurian.

1887. Gourret. Rec. zool. Suisse, iv: 454-455. *Pl.* 21, *fig.* 16.

1980. Eresus ——. (Eresoidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1845. Berendt. Bernst. befindl. organ. reste. vorw., i: 56.

1981. Eresus curtipes. (Eresoidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1845. Koch-Berendt. Jahrb. min., 1845: 872.
1854. " Berendt, Bernst. befindl. organ. reste vorw., i, th. ii: 87–88. *Pl.* 9, *fig.* 82.
1856. Giebel. Insect. d. vorwelt, 466.

1982. Eresus monachus. (Eresoidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1845. Koch-Berendt. Jahrb. min., 1845: 872.
1854. " Berendt, Bernst. befindl. organ. reste vorw., i, th. ii: 86–87. *Pl.* 9, *fig.* 81.
1856. Giebel. Insect. d. vorwelt, 466.
1890. McCook. Amer. spiders, ii: 467. *Fig.* 394.

1983. Erigone ———. (Theridides.)

Locality: Prussian amber. Horizon: Ligurian.

1845. Berendt. Bernst. befindl. organ. reste vorw., i: 56.

1984. Erigone deckenii. (Theridides.)

Locality: Rott, Rhenish Prussia. Horizon: Aquitanian.

1878. Bertkau. Verhandl. naturh. ver. preuss. rheinl., (4), v: 351. *Pl.* 5, *figs.* 3, 3*a*.

1985. Erigone stigmatosa. (Theridides.)

Locality: Prussian amber. Horizon: Ligurian.

1845. Koch-Berendt. Jahrb. min., 1845: 871.
1854. " Berendt, Bernst. befindl. organ. reste vorw., i, th. ii: 38. *Pl.* 16, *fig.* 136.
1856. Giebel. Insect. d. vorwelt, 443–444.

1986. Erithus ———. (Drassides.)

Locality: Prussian amber. Horizon: Ligurian.

1856. Menge. Progr. petrischule Danzig, 1856: 8.

1987. Erithus applanatus. (Drassides.)

Locality: Prussian amber. Horizon: Ligurian.

1854. Menge. Koch-Berendt, Bernst. befindl. organ. reste vorw., i, th. ii: 69 (undescr.).
1853–'56. Bronn. Lethæa geogn., 3e aufl., iii: 630.
1856. Giebel. Insect. d. vorwelt, 459.
1870. Thorell. European spiders, i: 229.

1988. Ero ———. (Theridides.)

Locality: Prussian amber. Horizon: Ligurian.

1845. Berendt. Bernst. befindl. organ. reste vorw., i: 56.

1989. Ero ——— (7 sp.). (Theridides.)

Locality: Prussian amber. Horizon: Ligurian.

1856. Menge. Progr. petrischule Danzig, 1856: 7.

1990. Ero coronata. (Theridides.)

Locality: Prussian amber. Horizon: Ligurian.

1854. Menge. Koch-Berendt, Bernst. befindl. organ. reste vorw., i, th. ii: 33 (undescr.).
1856. Giebel. Insect. d. vorwelt, 441.

Ero exculpta. See Ero exsculpta.

1991. Ero exsculpta. (Theridides.)

Locality: Prussian amber. Horizon: Ligurian.

1854. Menge. Koch-Berendt, Bernst. befindl. organ. reste vorw., i, th. ii: 33, 124 (undescr.).
1856. Giebel. Insect. d. vorwelt, 441 (exculpta).

1992. Ero quadripunctata. (Theridides.)

Locality: Prussian amber. Horizon: Ligurian.

1854. Menge. Koch-Berendt, Bernst. befindl. organ. reste vorw., i, th. ii: 33 (undescr.).
1856. Giebel. Insect. d. vorwelt, 441.

1993. Ero setulosa. (Theridides.)

Locality: Prussian amber. Horizon: Ligurian.

1845. Koch-Berendt. Jahrb. min., 1845: 871.
1854. " Berendt, Bernst. befindl. organ. reste vorw., i, th. ii: 31–32. *Pl.* 4, *fig.* 20.
1856. Giebel. Insect. d. vorwelt, 441.
1890. McCook. Amer. spiders, ii: 467. *Fig.* 395.

1994. Ero sphærica. (Theridides.)

Locality: Prussian amber. Horizon: Ligurian.

1845. Koch-Berendt. Jahrb. min., 1845: 871.
1854. " Berendt, Bernst. befindl. organ. reste vorw., i, th. ii: 32–33. *Pl.* 4, *fig.* 21.
1856. Giebel. Insect. d. vorwelt, 441.

1995. Erythræus ———. (Trombididæ.)

Locality: Prussian amber. Horizon: Ligurian.

1845. Berendt. Bernst. befindl. organ. reste vorw., i: 56.

1996. Erythræus hirsutus. (Trombididæ.)

Locality: Prussian amber. Horizon: Ligurian.

1854. Menge. Koch-Berendt, Bernst. befindl. organ. reste vorw., i, th. ii: 107.
1856. Giebel. Insect. d. vorwelt, 481.
1884. Karsch. Berl. entom. zeitschr., xxviii: 175.

1997. Erythræus lagopus. (Trombididæ.)

Locality: Prussian amber. Horizon: Ligurian.

1854. Menge. Koch-Berendt, Bernst. befindl. organ. reste vorw., i, th. ii: 107.
1856. Giebel. Insect. d. vorwelt, 481.

1998. Erythræus proavus. (Trombididæ.)

Locality: Prussian amber. Horizon: Ligurian.

1854. Menge. Koch-Berendt, Bernst. befindl. organ. reste vorw., i, th. ii: 107.
1856. Giebel. Insect. d. vorwelt, 481.
1884. Karsch. Berl. entom. zeitschr., xxviii: 175.

1999. Erythræus raripilus. (Trombididæ.)

Locality: Prussian amber. Horizon: Ligurian.

1854. Menge. Koch-Berendt, Bernst. befindl. organ. reste vorw., i, th. ii: 107.
1856. Giebel. Insect. d. vorwelt, 481.

2000. Euophrys gibberula. (Attoidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1854. Menge. Koch-Berendt, Bernst. befindl. organ. reste vorw., i, th. ii: 93.
1856. Giebel. Insect. d. vorwelt, 468.
See also Phidippus gibberulus.

2001. Euryopus ——. (Theridides.)

Locality: Prussian amber. Horizon: Ligurian.

1856. Menge. Progr. petrischule Danzig, 1856: 7.

2002. Euryopus gracilipes. (Theridides.)

Locality: Prussian amber. Horizon: Ligurian.

1854. Menge. Koch-Berendt, Bernst. befindl. organ. reste vorw., i, th. ii: 40 (undescr.).
1853–'56. Bronn. Lethæa geogn., 3e aufl., iii: 633.
1856. Giebel. Insect. d. vorwelt, 445.

2003. Flegia ——. (Theridides.)

Locality: Prussian amber. Horizon: Ligurian.

1845. Berendt. Bernst. befindl. organ. reste vorw., i: 56.

2004. Flegia ——. (Theridides.)

Locality: Prussian amber. Horizon: Ligurian.

1856. Menge. Progr. petrischule Danzig, 1856: 7.

2005. Flegia longimana. (Theridides.)

Locality: Prussian amber. Horizon: Ligurian.

1845. Koch-Berendt. Jahrb. min., 1845: 871.
1854. " Berendt, Bernst. befindl. organ. reste vorw., i, th. ii: 29–30. *Pl.* 3, *fig.* 18.
1853–'56. Bronn. Lethæa geogn., 3e aufl., iii: 634–635. *Pls.* 42'*a*, *fig.* 10.
1856. Giebel. Insect. d. vorwelt, 440.
1870. Thorell. European spiders, i: 226.

2006. Gea ——. (Epeirides.)

Locality: Prussian amber. Horizon: Ligurian.

1845. Berendt. Bernst. befindl. organ. reste vorw., i: 56.

2007. Gea —— (4 sp.). (Epeirides.)

Locality: Prussian amber. Horizon: Ligurian.

1856. Menge. Progr. petrischule Danzig, 1856: 6–7.

2008. Gea epeiroidea. (Epeirides.)

Locality: Prussian amber. Horizon: Ligurian.

1845. Koch-Berendt. Jahrb. min., 1845: 871.
1854. " Berendt, Bernst. befindl. organ. reste vorw., i, th. ii: 23–24. *Pl.* 3, *fig.* 12.
1853–'56. Bronn. Lethæa geogn., 3ᵉ aufl., iii: 636–637. *Pls.* 42'*a*, *fig.*12.
1856. Giebel. Insect. d. vorwelt, 436.
1890. McCook. Amer. spiders, ii: 452. *Fig.* 373.
See also Græa epeiroidea.

2009. Gea krantzi. (Epeirides.)

Locality: Rott, Rhenish Prussia. Horizon: Aquitanian.

1859. Heyden. Palaeontogr., viii: 2. *Pl.* 1, *fig.* 11.
1890. McCook. Amer. spiders, ii: 452.
See also Epeira krantzi.

2010. Gea militaris. (Epeirides.)

Locality: Prussian amber. Horizon: Ligurian.

1854. Menge. Koch-Berendt, Bernst. befindl. organ. reste vorw., i, th. ii: 28.
See also Androgeus militaris, Græa militaris.

2011. Gea obscura. (Epeirides.)

Locality: Prussian amber. Horizon: Ligurian.

1845. Koch-Berendt. Jahrb. min., 1845: 871.
1854. " Berendt, Bernst. befindl. organ. reste vorw., i, th. ii: 24. *Pl.* 3, *fig.* 13.
1856. Giebel. Insect. d. vorwelt, 436.
See also Antopia obscura, Græa obscura.

2012. Gea pubescens. (Epeirides.)

Locality: Prussian amber. Horizon: Ligurian.

1854. Menge. Koch-Berendt, Bernst. befindl. organ. reste vorw., i, th. ii: 24.
1856. Giebel. Insect d. vorwelt, 436.
See also Græa pubescens.

2013. Gea triquetra. (Epeirides.)

Locality: Prussian amber. Horizon: Ligurian.

1854. Menge. Koch-Berendt, Bernst. befindl. organ. reste vorw., i, th. ii: 29.
See also Androgeus triqueter, Græa triquetra.

2014. Gerdia myura. (Hersilioidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1869. Menge. Scorp. (Schrift. naturf. gesellsch. Danzig, ii pt. ii): 8–9. *Figs. a–c.*
1870. Thorell. European spiders, i: 228–229.
1885. Scudder. Zittel, Handb. palaeont., i, th. ii: 743. *Fig.* 923.
1886. " Zittel-Barrois, Traité de paléont., ii: 742. *Fig.* 940.

2015. Gonyleptes ——. (Gonyleptidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1845. Berendt. Bernst. befindl. organ. reste vorw., i: 56.

2016. Gonyleptes nemastomoides. (Gonyleptidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1845. Koch-Berendt. Jahrb. min., 1845: 872.
1854. " Berendt, Bernst. befindl. organ. reste vorw., i, th. ii: 102. *Pl.* **12,** *fig.* **101.**
See also Acantholophus nemastomoides.

2017. Gorgopis ——— (5 sp.). (Attoidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1856. Menge. Progr. petrischule Danzig, 1856: 9.

2018. Gorgopis fasciata. (Attoidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1854. Menge. Koch-Berendt, Bernst. befindl. organ. reste vorw., i, th. ii: 93.
1853–'56. Bronn. Lethæa geogn., 3^e aufl., iii: 625–626. *Pls.* **42'***a*, *fig* **.1.**
1856. Giebel. Insect. d. vorwelt, 467–468.
See also Phidippus fasciatus, P. formosus.

2019. Gorgopis frenata. (Attoidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1856. Giebel. Insect. d. vorwelt, 466–467.
1870. Thorell. European spiders, i: 232–233.
See also Phidippus frenatus, P. pusillus, P. paululus, Gorgopis torva.

2020. Gorgopis lynx. (Attoidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1854. Menge. Koch-Berendt, Bernst. befindl. organ. reste vorw., i, th. ii: 93.
See also G. melanocephala, etc.

2021. Gorgopis marginata. (Attoidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1854. Menge. Koch-Berendt, Bernst. befindl. organ. reste vorw., i, th. ii: 93.
1856. Giebel. Insect. d. vorwelt, 467.
See also Phidippus marginatus.

2022. Gorgopis melanocephala. (Attoidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1856. Giebel. Insect. d. vorwelt, 467.
See also Phidippus melanocephalus, P. impressus, Gorgopis lynx.

2023. Gorgopis naumanni. (Attoidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1856. Giebel. Insect. d. vorwelt, 467.

2024. Gorgopis torva. (Attoidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1854. Menge. Koch-Berendt, Bernst. befindl. organ. reste vorw., i, th. ii: 93.
See also G. frenata, etc.

2025. Græa epeiroidea. (Epeirides.)

Locality: Prussian amber. Horizon: Ligurian.

1870. Thorell. European spiders, i: 225.
See also Gea epeiroidea.

2026. Græa militaris. (Epeirides.)

Locality: Prussian amber. Horizon: Ligurian.

1870. Thorell. European spiders, i: 225.
See also Gea militaris, etc.

2027. Græa obscura. (Epeirides.)

Locality: Prussian amber. Horizon: Ligurian.

1870. Thorell. European spiders, i: 225.
See also Gea obscura, etc.

2028. Græa pubescens. (Epeirides.)

Locality: Prussian amber. Horizon: Ligurian.

1870. Thorell. European spiders, i: 225.
See also Gea pubescens.

2029. Græa triquetra. (Epeirides.)

Locality: Prussian amber. Horizon: Ligurian.

1870. Thorell. European spiders, i: 225.
See also Gea triquetra, etc.

Herselioides thanatiformis. See Hersilioides thanatiformis.

2030. Hersilia ——. (Hersilioidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1845. Berendt. Bernst. befindl. organ. reste vorw., i: 56.

2031. Hersilia aquisextana. (Hersilioidæ.)

Compared with Hersilia indica Luc.

Locality: Aix, France. Horizon: Ligurian.

1887. Gourret. Rec. zool. Suisse, iv: 458–460. *Pl.* 21, *fig.* 14.

2032. Hersilia longipes. (Hersilioidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1856. Giebel. Insect. d. vorwelt, 450.

2033. Hersilia miranda. (Hersilioidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1845. Koch-Berendt. Jahrb. min., 1845: 871.
1854. " Berendt, Bernst. befindl. organ. reste vorw., i, th. ii: 50. *Pl* 17, *fig.* 147.
1856. Giebel. Insect. d. vorwelt, 450.

2034. Hersilioides thanatiformis. (Hersilioidæ.)

Locality: Aix, France. Horizon: Ligurian.

1887. Gourret. Rec. zool. Suisse, iv: 460–462 (Herselioides). *Pl.* 23, *fig.* 24.

2035. Heteromma intersecta. (Drassides.)

Locality: Prussian amber. Horizon: Ligurian.

1856. Menge. Progr. petrischule Danzig, 1856: 8.
1870. Thorell. European spiders, i: 229.

2036. **Histopona? anthracina.** (Agalenides.)

Locality: Rott, Rhenish Prussia. Horizon: Aquitanian.

1878. **Bertkau.** Verhandl. naturh. ver. preuss. rheinl., (4), v: 351–352. *Pl.* 5, *fig.* 5.

2037. **Idmonia virginea.** (Drassides.)

Locality: Prussian amber. Horizon: Ligurian.

1854. **Menge.** Koch-Berendt, Bernst. befindl. organ. reste vorw., i, th. ii: 94 (undescr.).
1853–'56. **Bronn.** Lethæa geogn., 3ᵉ aufl., iii: 639.
1856. **Giebel.** Insect. d. vorwelt, 469.
1870. **Thorell.** European spiders, i: 230.

2038. **Ixodes tertiarius.** (Ixodidæ.)

Locality: Green River, Wyo. Horizon: Oligocene.

1885. **Scudder.** Zittel, Handb. palaeont., i, th. ii: 733. *Fig.* 906.
1886. " Zittel-Barrois, Traité de paléont., ii: 732. *Fig.* 922.
1890. " Tert. ins. N. A., 47. *Pl.* 6, *fig.* 12.

2039. **Leda ———.** (Attides.)

Locality: Prussian amber. Horizon: Ligurian.

1845. **Berendt.** Bernst. befindl. organ. reste vorw., i: 56.

2040. **Leda promissa.** (Attides.)

Locality: Prussian amber. Horizon: Ligurian.

1845. **Koch-Berendt.** Jahrb. min., 1845: 872.
1854. " Berendt, Bernst. befindl. organ. reste vorw., i, th. ii: 93–94. *Pl.* 10, *fig.* 93.
1856. **Giebel.** Insect. d. vorwelt, 468–469.
1870. **Thorell.** European spiders, i: 232.

See also Steneattus promissus.

2041. **Leiobunum longipes.** (Phalangioidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1854. **Menge.** Koch-Berendt, Bernst. befindl. organ. reste vorw., i, th. ii: 102.
1856. **Giebel.** Insect. d. vorwelt, 477.

Limnochares ———. See II, HEMIPTERA, Idem.

2042. **Linoptes ———.** (Lycosoidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1856. **Menge.** Progr. petrischule Danzig, 1856: 8.

2043. **Linoptes oculeus.** (Lycosoidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1854. **Menge.** Koch-Berendt, Bernst. befindl. organ. reste vorw., i, th. ii: 94 (undescr.).
1853–'56. **Bronn.** Lethæa geogn., 3ᵉ aufl., iii: 639.
1856. **Giebel.** Insect. d. vorwelt, 469.
1870. **Thorell.** European spiders, i: 232.

2044. **Linyphia ———.** (Theridides.)

Locality: Prussian amber. Horizon: Ligurian.

1845. **Berendt.** Bernst. befindl. organ. reste vorw., i: 56.

2045. Linyphia ——— (2 sp.). (Therididea.)

Locality: Prussian amber. Horizon: Ligurian.

1856. Menge. Progr. petrischule Danzig, 1856: 7.

2046. Linyphia ———. (Therididea.)

Locality: Florissant, Colo. Horizon: Oligocene.

1882. Scudder. Harv. univ. bull., ii: 303.
1882. " Field nat., i: 62.
1883. " Ann. rep. U. S. geol. surv. terr., xii: 288.

2047. Linyphia andræi. (Therididea.)

Locality: Rott, Rhenish Prussia. Horizon: Aquitanian.

1878. Bertkau. Verhandl. naturh. ver. preuss. rheinl., (4), v: 350–351. *Pl.* 5, *fig.* 6.

2048. Linyphia cheiracantha. (Therididea.)

Locality: Prussian amber. Horizon: Ligurian.

1845. Koch-Berendt. Jahrb. min., 1845: 871.
1854. " Berendt, Bernst. befindl. organ. reste vorw., i, th. ii: 41. *Pl.* 16, *fig.* 137.
1856. Giebel. Insect. d. vorwelt, 445.

See also L. oblonga.

2049. Linyphia oblonga. (Therididea.)

Locality: Prussian amber. Horizon: Ligurian.

1845. Koch-Berendt. Jahrb. min., 1845: 871.
1854. " Berendt, Bernst. befindl. organ. reste vorw., i, th. ii: 40–41.
1854. Menge. Ibid., 8, 42 (= L. cheiracantha).

See also L. cheiracantha.

2050. Linyphia retensa. (Therididea.)

Compared with L. cheiracantha.

Locality: Florissant, Colo. Horizon: Oligocene.

1890. Scudder. Tert. ins. N. A., 75–76. *Pl.* 11, *figs.* 25, 27.

2051. Linyphia rottensis. (Therididea.)

Locality: Rott, Rhenish Prussia. Horizon: Aquitanian.

1878. Bertkau. Verhandl. naturh. ver. preuss. rheinl., (4), v: 349–350. *Pl.* 5, *fig.* 2.

2052. Lycosoides hersiliiformis. (Lycosoidæ.)

Locality: Célas, Gard, France. Horizon: Oligocene.

1887. Gourret. Rec. zool. Suisse, iv: 443–444. *Pl.* 21, *fig.* 13.

2053. Macaria ———. (Drassides.)

Locality: Prussian amber. Horizon: Ligurian.

1845. Berendt. Bernst. befindl. organ. reste vorw., i: 56.

2054. Macaria ——— (4 sp.). (Drassides.)

Locality: Prussian amber. Horizon: Ligurian.

1856. Menge. Progr. petrischule Danzig, 1856: 7.

2055. Macaria ovata. (Drassides.)

Locality: Prussian amber. Horizon: Ligurian.

1854. Menge. Koch-Berendt, Bernst. befindl. organ. reste vorw., i, th. ii: 64, 124 (undescr.).
1856. Giebel. Insect. d. vorwelt, 457.

2056. Macaria procera. (Drassides.)

Compared with M. fastuosa.

Locality: Prussian amber. Horizon: Ligurian.

1845. Koch-Berendt. Jahrb. min., 1845: 872.
1854. “ Berendt, Bernst. befindl. organ. reste vorw., i, th. ii: 63–64. *Pl.* 6, *fig.* 55.
1856. Giebel. Insect. d. vorwelt, 457.

2057. Macaria squamata. (Drassides.)

Locality: Prussian amber. Horizon: Ligurian.

1854. Menge. Koch-Berendt, Bernst. befindl. organ. reste vorw., i, th. ii: 64 (undescr.).
1856. Giebel. Insect. d. vorwelt, 457.

2058. Macaria tenella. (Drassides.)

Compared with M. procera K. and B.

Locality: Oeningen, Baden. Horizon: Tortonian.

1865. Heer. Urwelt der Schweiz, 356, 357. *Fig.* 218.
1872. “ Monde prim. Suisse, 436, 438. *Fig.* 218, on *p.* 437.
1876. “ Prim. world Switz., ii: 10, 12. *Fig.* 218.
1879. “ Urwelt der Schweiz, 2^e aufl., 380, 382. *Fig.* 253, on *p.* 381.

2059. Macaria tenuis. (Drassides.)

Locality: Prussian amber. Horizon: Ligurian.

1854. Menge. Koch-Berendt, Bernst. befindl. organ. reste vorw., i, th. ii: 64 (undescr.).
1856. Giebel. Insect. d. vorwelt, 457.

2060. Mastigusa acuminata.

Locality: Prussian amber. Horizon: Ligurian.

1854. Menge. Koch-Berendt, Bernst. befindl. organ. reste vorw., i, th. ii: 94 (undescr.).
1853–'56. Bronn. Lethæa geogn., 3^e aufl., iii: 639.
1856. Giebel. Insect. d. vorwelt, 469.
1870. Thorell. European spiders, i: 233.

2061. Megameropsis aquensis. (Trombididæ.)

Locality: Aix, France. Horizon: Ligurian.

1887. Gourret. Rec. zool. Suisse, iv: 435–437. *Pl.* 20, *fig.* 1.

2062. Melanophora ———. (Drassides.)

Locality: Prussian amber. Horizon: Ligurian.

1845. Berendt. Bernst. befindl. organ. reste vorw., i: 56.

2063. Melanophora ——— (4 sp.). (Drassides.)

Locality: Prussian amber. Horizon: Ligurian.

1856. Menge. Progr. petrischule Danzig, 1856: 7.

2064. Melanophora concinna. (Drassides.)

Locality: Prussian amber. Horizon: Ligurian.

1845. Koch-Berendt. Jahrb. min., 1845: 872.
1854. " Berendt, Bernst. befindl. organ. reste vorw., i, th. ii: 61–62. *Pl.* 6, *fig.* 52.
1856. Giebel. Insect. d. vorwelt, 456.
See also M. nobilis.

2065. Melanophora lepida. (Drassides.)

Locality: Prussian amber. Horizon: Ligurian.

1854. Menge. Koch-Berendt, Bernst. befindl. organ. reste vorw., i, th. ii: 63.
1856. Giebel. Insect. d. vorwelt, 457.

2066. Melanophora mundula. (Drassides.)

Locality: Prussian amber. Horizon: Ligurian.

1845. Koch-Berendt. Jahrb. min. 1845: 872.
1854. " Berendt, Bernst. befindl. organ. reste vorw., i, th. ii: 62–63. *Pl.* 6, *fig.* 54.
1856. Giebel. Insect. d. vorwelt, 456–457.
See also Therea hispida.

2067. Melanophora nitida. (Drassides.)

Locality: Prussian amber. Horizon: Ligurian.

1854. Menge. Koch-Berendt, Bernst. befindl. organ. reste vorw., i, th. ii: 63 (undescr.).
1856. Giebel. Insect. d. vorwelt, 457.

2068. Melanophora nobilis. (Drassides.)

Locality: Prussian amber. Horizon: Ligurian.

1845. Koch-Berendt. Jahrb. min., 1845: 872.
1854. " Berendt, Bernst. befindl. organ. reste vorw., i, th. ii: 62. *Pl.* 6, *fig.* 53.
1854. Menge. Ibid., 8 (= M. concinna).
1856. Giebel. Insect. d. vorwelt, 456.
See also M. concinna.

2069. Melanophora regalis. (Drassides.)

Locality: Prussian amber. Horizon: Ligurian.

1845. Koch-Berendt. Jahrb. min., 1845: 872.
1854. " Berendt, Bernst. befindl. organ. reste vorw., i, th. ii: 60–61. *Pl.* 6, *fig.* 51.
1856. Giebel. Insect. d. vorwelt, 456.

Micriphantes (several species). See Micryphantes, same species.

2070. Micryphantes ———. (Therididès.)

Locality: Prussian amber. Horizon: Ligurian.

1845. Berendt. Bernst. befindl. organ. reste vorw., i: 56.

2071. Micryphantes ——— (4 sp.). (Therididès.)

Locality: Prussian amber. Horizon: Ligurian.

1856. Menge. Progr. petrischule Danzig, 1856: 7 (Micriphantes).

2072. Micryphantes globulus. (Theridides.)

Locality: Prussian amber. Horizon: Ligurian.

1854. Menge. Koch-Berendt, Bernst. befindl. organ. reste vorw., i, th. ii: 40 (undescr.). (Micriphantes.)
1856. Giebel. Insect. d. vorwelt, 444.

2073. Micryphantes infulatus. (Theridides.)

Locality: Prussian amber. Horizon: Ligurian.

1845. Koch-Berendt. Jahrb. min., 1845: 871.
1854. " Berendt, Bernst. befindl. organ. reste vorw., i, th. ii: 40. *Pl.* 4, *fig.* 29. (Micriphantes.)
1856. Giebel. Insect. d. vorwelt, 444.

2074. Micryphantes molybdinus. (Theridides.)

Locality: Prussian amber. Horizon: Ligurian.

1845. Koch-Berendt. Jahrb. min., 1845: 871. (Micriphantes.)
1854. " Berendt, Bernst. befindl. organ. reste vorw., i, th. ii: 39. *Pl.* 4, *fig.* 27.
1856. Giebel. Insect. d. vorwelt, 444.

2075. Micryphantes regularis. (Theridides.)

Locality: Prussian amber. Horizon: Ligurian.

1845. Koch-Berendt. Jahrb. min., 1845: 871. (Micriphantes.)
1854. " Berendt, Bernst. befindl. organ. reste vorw., i, th. ii: 38-39. *Pl.* 4, *fig.* 28.
1856. Giebel. Insect. d. vorwelt, 444.

2076. Micryphantes turritus. (Theridides.)

Locality: Prussian amber. Horizon: Ligurian.

1854. Menge. Koch-Berendt, Bernst. befindl. organ. reste vorw., i, th. ii: 40 (undescr.). (Micriphantes.)
1856. Giebel. Insect. d. vorwelt, 444.

2077. Mizalia ——. (Mizalioidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1845. Berendt. Bernst. befindl. organ. reste vorw., i: 56.

2078. Mizalia —— (2 sp.). (Mizalioidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1856. Menge. Progr. petrischule Danzig, 1856: 8.

2079. Mizalia globosa. (Mizalioidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1845. Koch-Berendt. Jahrb. min., 1845: 871.
1854. " Berendt, Bernst. befindl. organ. reste vorw., i, th. ii: 43. *Pl.* 5, *fig.* 32.
1856. Giebel. Insect. d. vorwelt, 446.
See also Theridium globosum.

2080. Mizalia pilulosa. (Mizalioidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1845. Koch-Berendt. Jahrb. min., 1845: 871.
1854. " Berendt, Bernst. befindl. organ. reste vorw., i, th. ii: 45. *Pl.* 5, *fig.* 34; *Pl.* 16, *fig.* 138.
1854. Menge. Ibid., 8 (= M. rostrata).
See also Mizalia rostrata.

2081. Mizalia punctulata. (Mizalioidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1845. Koch-Berendt. Jahrb. min., 1845: 871.
1854. " Berendt, Bernst. befindl. organ. reste vorw., i, th. ii: 42–43. *Pl.* 5, *fig.* 31.
See also Antopia punctulata.

2082. Mizalia rostrata. (Mizalioidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1845. Koch-Berendt. Jahrb. min., 1845: 871.
1854. " Berendt, Bernst. befindl. organ. reste vorw., i, th. ii: 44. *Pl.* 5, *fig.* 33.
1856. Giebel. Insect. d. vorwelt, 445–446.
1870. Thorell. European spiders, i: 228.
1885. Scudder. Zittel, Handb. palaeont., i, th. ii: 743. *Fig.* 924.
1886. " Zittel-Barrois, Traité de paléont., ii: 743. *Fig.* 941.
See also M. pilulosa.

2083. Mizalia truncata. (Mizalioidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1854. Menge. Koch-Berendt, Bernst. befindl. organ. reste vorw., i, th. ii: 45.
1856. Giebel. Insect. d. vorwelt, 446.

2084. Mygale ambigua. (Theraphosoidæ.)

Locality: Aix, France. Horizon: Ligurian.

1887. Gourret. Rec. zool. Suisse, iv: 480–482. *Pl.* 23, *fig.* 28.

2085. Nemastoma ——. (Nemastomoidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1845. Berendt. Bernst. befindl. organ. reste vorw., i: 56.

2086. Nemastoma clavigerum. (Nemastomoidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1854. Menge. Koch-Berendt, Bernst. befindl. organ. reste vorw., i, th. ii: 99.
1856. Giebel. Insect. d. vorwelt, 475.

2087. Nemastoma denticulatum. (Nemastomoidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1845. Koch-Berendt. Jahrb. min., 1845: 872.
1854. " Berendt, Bernst. befindl. organ. reste vorw., i, th. ii: 98–99. *Pl.* 11, *fig.* 98.
1856. Giebel. Insect. d. vorwelt, 475.

2088. Nemastoma incertum. (Nemastomoidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1845. Koch-Berendt. Jahrb. min., 1845: 872.
1854. " Berendt, Bernst. befindl. organ. reste vorw., i, th. ii: 99. *Pl.* 17, *fig.* 149.
1856. Giebel. Insect. d. vorwelt, 475.

2089. Nemastoma tuberculatum. (Nemastomoidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1845. Koch-Berendt. Jahrb. min., 1845: 872.
1854. " Berendt, Bernst. befindl. organ. reste vorw., i, th. ii: 97–98. *Pl.* 11, *fig.* 97.
1856. Giebel, Insect. d. vorwelt, 474–475.

2090. Nephila ———. (Epeirides.)

Compared with N. plumipes.

Locality: Florissant, Colo. Horizon: Oligocene.

1881. Scudder. Bull. U. S. geol. surv. terr., vi: 294.
1882. " Harv. univ. bull., ii: 303.
1882. " Field nat., i: 63.
1883. " Ann. rep. U. S. geol. surv. terr., xii: 288.
See also Nephila pennatipes.

2091. Nephila pennatipes. (Epeirides.)

Compared with N. plumipes.

Locality: Florissant, Colo. Horizon: Oligocene.

1885. Scudder. Zittel, Handb. palaeont., i, th. ii: 744. *Fig.* 926.
1886. " Zittel-Barrois, Traité de paléont., ii: 744. *Fig.* 943.
1890. " Tert. ins. N. A., 89–90. *Pl.* 11, *fig.* 12.
1890. McCook. Amer. spiders, ii: 450–451. *Fig.* 372.
See also Nephila ———.

2092. Nothrus convexulus. (Oribatidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1884. Karsch. Berl. entom. zeitschr., xxviii: 175.
See also Oribates convexulus.

2093. Nothrus kühli. (Oribatidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1884. Karsch. Berl. entom. zeitschr., xxviii: 176. *Figs.* 1–3.

2094. Nothrus punctulus. (Oribatidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1884. Karsch. Berl. entom. zeitschr., xxviii: 176.

2095. Nothrus sulcatus. (Oribatidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1884. Karsch. Berl. entom. zeitschr., xxviii: 176.

2096. Obisium ———. (Chelonethi.)

Locality: Prussian amber. Horizon: Ligurian.

1845. Berendt. Bernst. befindl. organ. reste vorw., i: 56.

2097. Obisium ———. (Chelonethi.)

Locality ? Horizon: Tertiary.

1846. Giebel. Paläozool., 267.

Obisium ———. See Chelifer ——— Schweigger.

2098. Obisium rathkei. (Chelonethi.)

Locality: Prussian amber. Horizon: Ligurian.

1845. Koch-Berendt. Jahrb. min., 1845: 872.

1854. " Berendt, Bernst. befindl. organ. reste vorw., i, th. ii: 96–97. *Pl.* 10, *fig.* 96.

1855. Menge. Scheerenspinnen, 28–29. *Pl.* 4, *fig.* 4 (rathkii). (Probably young of Chel. kleemanni.)

1856. Giebel. Insect. d. vorwelt, 473.

See also Chelifer kleemanni.

Obisium rathkii. See Obisium rathkei.

2099. Obisium sieboldii. (Chelonethi.)

Locality: Prussian amber. Horizon: Ligurian.

1854. Menge. Koch-Berendt, Bernst. befindl. organ. reste vorw., i, th. ii: 97 (sieboldtii).

1856. Giebel. Insect. d. vorwelt, 473 (sieboldi).

1870. Hagen. Proc. Bost. soc. nat. hist., xiii: 270 (sieboldtii).

See also Chelifer sieboldii.

Obisium sieboldtii. See Obisium sieboldii.

2100. Ocia hirsuta. (Thomisides.)

Locality: Prussian amber. Horizon: Ligurian.

1854. Koch-Berendt. Berendt, Bernst. befindl. organ. reste vorw., i, th. ii: 8 (name only).

2101. Ocypete ———. (Thomisides.)

Locality: Prussian amber. Horizon: Ligurian.

1845. Berendt. Bernst. befindl. organ. reste vorw., i: 56.

2102. Ocypete angustifrons. (Thomisides.)

Locality: Prussian amber. Horizon: Ligurian.

1854. Menge. Koch-Berendt, Bernst. befindl. organ. reste vorw., i, th. ii: 85 (undescr.).

1856. Giebel. Insect. d. vorwelt, 465.

2103. Ocypete crassipes. (Thomisides.)

Locality: Prussian amber. Horizon: Ligurian.

1845. Koch-Berendt. Jahrb. min., 1845: 872.

1854. " Berendt, Bernst. befindl. organ. reste vorw., i, th. ii: 84–85. *Pl.* 9, *fig.* 79.

1856. Giebel. Insect. d. vorwelt, 465.

2104. Ocypete decumana. (Thomisides.)

Locality: Prussian amber. Horizon: Ligurian.

1845. Koch-Berendt. Jahrb. min., 1845: 872.

1854. Berendt, Bernst. befindl. organ. reste vorw., i, th. ii: 85. *Pl.* *fig.* 80.

1856. Giebel. Insect. d. vorwelt, 465.
1856. Menge. Progr. petrischule Danzig, 1856: 8 (Oxypete).

2105. Ocypete marginata. (Thomisides.)

Locality: Prussian amber. Horizon: Ligurian.

1854. Menge. Koch-Berendt, Bernst. befindl. organ. reste vorw., i, th. ii: 85.
1856. Giebel. Insect. d. vorwelt, 465.

2106. Ocypete triguttata. (Thomisides.)

Locality: Prussian amber. Horizon: Ligurian.

1845. Koch-Berendt. Jahrb. min., 1845: 872.
1854. " Berendt, Bernst. befindl. organ. reste vorw., i, th. ii: 86. *Pl.* 16, *fig.* 141.

See also Pythonissa triguttata.

2107. Onca —— (2 sp.). (Epeirides.)

Locality: Prussian amber. Horizon: Ligurian.

1856. Menge. Progr. petrischule Danzig, 1856: 6.

2108. Onca lepida. (Epeirides.)

Locality: Prussian amber. Horizon: Ligurian.

1854. Menge. Koch-Berendt, Bernst. befindl. organ. reste vorw., i, th. ii: 24 (undescr.).
1856. Giebel. Insect. d. vorwelt, 437.

2109. Onca pumila. (Epeirides.)

Locality: Prussian amber. Horizon: Ligurian.

1854. Menge. Koch-Berendt, Bernst. befindl. organ. reste vorw., i, th. ii: 24 (undescr.).
1856. Giebel. Insect. d. vorwelt, 437.

2110. Opilio ——. (Phalangioidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1845. Berendt. Bernst. befindl. organ. reste vorw., i: 56.

2111. Opilio ——. (Phalangioidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1835. Gravenhorst. Uebers. schles. gesellsch. vaterl. cult., 1834: 92.

2112. Opilio corniger. (Phalangioidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1854. Menge. Koch-Berendt, Bernst. befindl. organ. reste vorw., i, th. ii: 101.
1856. Giebel. Insect. d. vorwelt, 476.

2113. Opilio ovalis. (Phalangioidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1845. Koch-Berendt. Jahrb. min., 1845: 872.
1854. " Berendt, Bernst. befindl. organ. reste vorw., i, th. ii: 99–100. *Pl.* 12, *fig.* 99.
1856. Giebel. Insect. d. vorwelt, 476.

2114. Opilio ramiger. (Phalangioidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1845. Koch-Berendt. Jahrb. min., 1845: 872.
1854. “ Berendt, Bernst. befindl. organ. reste vorw., i, th. ii: 100-101. *Pl.* 12, *fig.* 100.
1856. Giebel. Insect. d. vorwelt, 476.

2115. Opisthophylax exarata. (Thomisidea.)

Locality: Prussian amber. Horizon: Ligurian.

1856. Menge. Progr. petrischule Danzig, 1856: 9.
1870. Thorell. European spiders, i: 231.

2116. Oribates ——. (Oribatidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1845. Berendt. Bernst. befindl. organ. reste vorw., i: 56.

2117. Oribates convexulus. (Oribatidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1845. Koch-Berendt. Jahrb. min., 1845: 872.
1854. “ Berendt, Bernst. befindl. organ. reste vorw., i, th. ii: 109. *Pl.* 13, *fig.* 112.
1856. Giebel. Insect. d. vorwelt, 483 (convexus).
See also Nothrus convexulus.

Oribates convexus. See Oribates convexulus.

2118. Oribates politus. (Oribatidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1845. Koch-Berendt. Jahrb. min., 1845: 872.
1854. “ Berendt, Bernst. befindl. organ. reste vorw., i, th. ii: 110. *Pl.* 17, *fig.* 152.
1856. Giebel. Insect. d. vorwelt, 483.

Oxypete decumana. See Ocypete decumana.

2119. Parattus —— (3 sp.). (Attoidæ.)

Locality: Florissant, Colo. Horizon: Oligocene.

1882. Scudder. Harv. univ. bull., ii: 303.
1882. “ Field nat., i: 62.
1883. “ Ann. rep. U. S. geol. surv. terr., xii: 287.

2120. Parattus evocatus. (Attoidæ.)

Locality: Florissant, Colo. Horizon: Oligocene.

1890. Scudder. Tert. ins. N. A., 54-55.

2121. Parattus latitatus. (Attoidæ.)

Locality: Florissant, Colo. Horizon: Oligocene.

1890. Scudder. Tert. ins. N. A., 55-56.

2122. Parattus resurrectus. (Attoidæ.)

Locality: Florissant, Colo. Horizon: Oligocene.

1890. Scudder. Tert. ins. N. A., 53-54. *Pl.* 11, *fig.* 26.

Penthacleus tristiculus. See Penthaleus tristiculus.

2123. **Penthaleus** ——. (Trombididæ.)

Locality: Prussian amber. Horizon: Ligurian.

1845. Berendt. Bernst. befindl. organ. reste vorw., i: 56.

2124. **Penthaleus tristiculus.** (Trombididæ.)

Locality: Prussian amber. Horizon: Ligurian.

1845. Koch-Berendt. Jahrb. min., 1845: 872 (Penthacleus).
1854. " Berendt, Bernst. befindl. organ. reste vorw., i, th. ii: 108. *Pl.* 13, *fig.* 109.
1856. Giebel. Insect. d. vorwelt, 482.

2125. **Phalangillum hirsutum.** (Phalangioidæ.)

Locality: Aix, France. Horizon: Ligurian.

1887. Gourret. Rec. zool. Suisse, iv: 487–489. *Pl.* 21, *fig.* 15.

2126. **Phalangium** ——. Phalangioidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1820. Schlotheim. Petrefactenk., 43.

2127. **Phalangium** ——. (Phalangioidæ.)

Compared with P. phaleratum.

Locality: Aix, France. Horizon: Ligurian.

1829. Serres. Geogn. terrains tert., 220.
1847. Walck.-Gerv. Hist. nat. apt., iv: 345.
See also Phrynus fossilis.

2128. **Phalangium cancroides** (recent). (Phalangioidæ.)

Locality: Prussian amber. Horizon: Ligurian.

[1758. Linné. Syst. nat., ii: 1028.]
1830. Berendt. Insekten im bernstein, 38.
1839. Brullé. Gisem. ins. foss., 19.

2129. **Phalangium opilio** (recent). (Phalangioidæ.)

Locality: Prussian amber. Horizon: Ligurian.

[1758. Linné. Syst. nat., ii: 1027.]
1830. Berendt. Insekten im bernstein, 38.
1839. Brullé. Gisem. ins. foss., 19.

2130. **Phalangium succineum.** (Phalangioidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1822. Presl. Del. prag., i: 209.

Phalangopus subtiles. See Phalangopus subtilis.

2131. **Phalangopus subtilis.** (Scytodoidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1854. Menge. Koch-Berendt, Bernst. befindl. organ. reste vorw., i, th. ii: 94 (undescr.) (subtiles).
1853–'56. Bronn. Lethæa geogn., 3e aufl., iii: 639.
1856. Giebel. Insect. d. vorwelt, 469.
1870. Thorell. European spiders, i: 228.

2132. Phidippus ———. (Attoidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1845. Berendt. Bernst. befindl. organ. reste vorw., i: 56.

2133. Phidippus fasciatus. (Attoidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1845. Koch-Berendt. Jahrb. min., 1845: 872.
1854. " Berendt, Bernst. befindl. organ. reste vorw., i, th. ii: 89–90. *Pl.* 10, *figs.* 86–87.

See also Gorgopis fasciata, etc.

2134. Phidippus formosus. (Attoidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1845. Koch-Berendt. Jahrb. min., 1845: 872.
1854. " Berendt, Bernst. befindl. organ. reste vorw., i, th. ii: 90. *Pl.* 10, *fig.* 88.

See also Gorgopis fasciata, etc.

2135. Phidippus frenatus. (Attoidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1845. Koch-Berendt. Jahrb. min., 1845: 872.
1854. " Berendt, Bernst. befindl. organ. reste vorw., i, th. ii: 88–89. *Pl.* 9, *figs.* 83, 84.
1890. McCook. Amer. spiders, ii: 467. *Figs.* 391–392.

See also Gorgopis frenata, etc.

2136. Phidippus gibberulus. (Attoidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1845. Koch-Berendt. Jahrb. min., 1845: 872.
1854. " Berendt, Bernst. befindl. organ. reste vorw., i, th. ii: 92. *Pl.* 10, *fig.* 92.

See also Euophrys gibberula.

2137. Phidippus impressus. (Attoidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1845. Koch-Berendt. Jahrb. min., 1845: 872.
1854. " Berendt, Bernst. befindl. organ. reste vorw., i, th. ii: 91. *Pl.* 10, *fig.* 90.

See also Gorgopis melanocephala, etc.

2138. Phidippus marginatus. (Attoidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1845. Koch-Berendt. Jahrb. min., 1845: 872.
1854. " Berendt, Bernst. befindl. organ. reste vorw., i. th. ii: 92–93. *Pl.* 16, *fig.* 142.

See also Gorgopis marginata.

2139. Phidippus melanocephalus. (Attoidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1845. Koch-Berendt. Jahrb. min., 1845: 872.
1854. " Berendt, Bernst. befindl. organ. reste vorw., i, th. ii: 89. *Pl.* 9, *fig.* 85.

See also Gorgopis melanocephala, etc.

2140. Phidippus paululus. (Attoidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1845. Koch-Berendt. Jahrb. min., 1845: 872.
1854. " Berendt, Bernst. befindl. organ. reste vorw., i, th. ii: 91. *Pl.* 10, *fig.* 89.
See also Gorgopis frenata, etc.

2141. Phidippus pusillus. (Attoidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1845. Koch-Berendt. Jahrb. min., 1845: 872.
1854. " Berendt, Bernst. befindl. organ. reste vorw., i, th. ii: 92. *Pl.* 10, *fig.* 91.
See also Gorgopis frenata, etc.

2142. Philodromus ——. (Thomisides.)

Locality: Prussian amber. Horizon: Ligurian.

1845. Berendt. Bernst. befindl. organ. reste vorw., i: 56.

2143. Philodromus dubius. (Thomisides.)

Locality: Prussian amber. Horizon: Ligurian.

1845. Koch-Berendt. Jahrb. min., 1845: 872.
1854. " Berendt, Bernst. befindl. organ. reste vorw., i, th. ii: 82. *Pl.* 8, *fig.* 76.
See also Pythonissa affinis.

2144. Philodromus griseus. (Thomisides.)

Locality: Prussian amber. Horizon: Ligurian.

1856. Menge. Progr. petrischule Danzig, 1856: 9 (undescr.).

2145. Philodromus microcephalus. (Thomisides.)

Locality: Prussian amber. Horizon: Ligurian.

1845. Koch-Berendt. Jahrb. min., 1845: 872.
1854. " Berendt, Bernst. befindl. organ. reste vorw., i, th, ii: 81–82. *Pl.* 8, *fig.* 75.
1890. McCook. Amer. spiders, ii: 467. *Fig.* 396.
See also Pythonissa microcephala.

2146. Philodromus reptans. (Thomisides.)

Locality: Prussian amber. Horizon: Ligurian.

1854. Menge. Koch-Berendt, Bernst. befindl. organ. reste vorw., i, th. ii: 84 (undescr.).
1856. " Progr. petrischule Danzig, 1856: 9.
1856. Giebel Insect. d. vorwelt, 464.

2147. Philodromus retrogradus. (Thomisides.)

Locality: Prussian amber. Horizon: Ligurian.

1854. Menge. Koch-Berendt, Bernst. befindl. organ. reste vorw., i, th. ii: 84 (undescr.).
1856. Giebel. Insect. d. vorwelt, 464.

2148. Philodromus spinimanus. (Thomisides.)

Locality: Prussian amber. Horizon: Ligurian.

1845. Koch-Berendt, Jahrb. min., 1845: 872.
1854. " Berendt. Bernst. befindl. organ. reste vorw., i. th. ii: 83. *Pl.* 9, *fig.* 78.

See also Pythonissa spinimana.

2149. Philodromus squamiger. (Thomisides.)

Locality: Prussian amber. Horizon: Ligurian.

1845. Koch-Berendt. Jahrb. min., 1845: 872.
1854. " Berendt. Bernst. befindl. organ. reste vorw., i, th. ii: 83. *Pl.* 9, *fig.* 77.

See also Pythonissa sericata.

2150. Pholcus ———. (Scytodoidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1856. Menge. Progr. petrischule Danzig, 1856: 9 (name only).

2151. Phrynus ———. (Pedipalpi.)

Locality: Aix, France. Horizon: Ligurian.

1829. Serres. Géogn. terrains tert., 220.

2152. Phrynus fossilis. (Pedipalpi.)

Compared with P. phaleratus Panz.

Locality: Aix, France. Horizon: Ligurian.

1834. Keferstein. Naturg. erdkörp., ii: 370 (undescr.).

See also Phalangium ——— Serres.

2153. Phrynus marioni. (Pedipalpi.)

Compared with P. reniformis Latr.

Locality: Aix, France. Horizon: Ligurian.

1887. Gourret. Rec. zool. Suisse, iv: 489–491. *Pl.* 21, *fig.* 11.

Phytonissa affinis. See Pythonissa affinis.

Phytonissa ambigua. See Pythonissa ambigua.

Phytonissa sericata. See Pythonissa sericata.

2154. Phytoptus antiquus (gall). (Phytoptidæ.)

Localities: Rott, Salzhausen, Germany. Horizon: Aquitanian.

1860. Heyden. Ber. oberh. gesellsch. nat. u. heilk., viii: 63.
1862. " Palaeontogr., x: 64. *Pl.* 10, *fig.* 1. (Not on Salix abbreviata Göpp., but on Passiflora brauni Ludw.).
1865. Heyd.-Heyd. Palaeontogr., xiv: 35.

2155. Platybunus ———. (Phalangioidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1845. Berendt. Bernst. befindl. organ. reste vorw., i: 56.

2156. Platybunus dentipalpus. (Phalangioidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1845. Koch-Berendt. Jahrb. min., 1845: 872.
1854. “ Berendt, Bernst. befindl. organ. reste vorw., i, th. ii: 101-102. *Pl.* 15, *fig.* 125.
1856. Giebel. Insect. d. vorwelt, 476-477.
1885. Scudder. Zittel, Handb. palaeont., i, th. ii: 741. *Fig.* 917.
1886. “ Zittel-Barrois, Traité de paléont., ii: 740. *Fig.* 934.

2157. Prodysdera intermedia. (Dysderides.)

Compared with Dysdera parvula, D. erythrina.

Locality: Aix, France. Horizon: Ligurian.

1887. Gourret. Rec. zool. Suisse, iv: 477-480. *Pl.* 20, *figs.* 4-6.

2158. Propetes ——— (5 sp.). (Attoidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1856. Menge. Progr. petrischule Danzig, 1856: 9.

2159. Propetes argutus. (Attoidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1854. Menge. Koch-Berendt, Bernst. befindl. organ. reste vorw., i, th. ii: 93 (undescr.).
1856. Giebel. Insect. d. vorwelt, 468.

2160. Propetes felinus. (Attoidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1854. Menge. Koch-Berendt, Bernst. befindl. organ. reste vorw., i, th. ii: 93 (undescr.).
1856. Giebel. Insect. d. vorwelt, 468.
1870. Thorell. European spiders, i: 233.

2161. Propetes griseus. (Attoidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1854. Menge. Koch-Berendt, Bernst. befindl. organ. reste vorw., i, th. ii: 93 (undescr.).
1856. Giebel. Insect. d. vorwelt, 468.

2162. Propetes latifrons. (Attoidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1854. Menge. Koch-Berendt, Bernst. befindl. organ. reste vorw., i, th. ii: 93.
1856. Giebel. Insect. d. vorwelt, 468.

2163. Propetes pumilus. (Attoidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1854. Menge. Koch-Berendt, Bernst. befindl. organ. reste vorw., i, th. ii: 93 (undescr.).
1856. Giebel. Insect. d. vorwelt, 468.

2164. Protochersis spinosus. (Eresoidæ.)

Compared with Palpimanus savignyi Aud.

Locality: Aix, France. Horizon: Ligurian.

1887. Gourret. Rec. zool. Suisse, iv: 474-477. *Pl.* 20, *fig.* 3.

2165. Protolachesis annulata. (Enyoidæ.)

Compared with Lachese perversa Sav.

Locality: Aix, France. Horizon: Ligurian.

1887. Gourret. Rec. zool. Suisse, iv: 467–469. *Pl.* 21, *fig.* 17; *Pl.* 22, *figs.* 21, 22.

2166. Protolycosa attiformis. (Lycosoidæ.)

Compared with Lycosa narbonensis Walck., Attoides eresiformis Brongn.

Locality: Aix, France. Horizon: Ligurian.

1887. Gourret. Rec. zool. Suisse, iv: 444–447. *Pl.* 20, *fig.* 7.

2167. Pseudopachygnathus maculatus. (Trombididæ.)

Compared with Pachygnathus villosus Dugès.

Location: Aix, France. Horizon: Ligurian.

1887. Gourret. Rec. zool. Suisse, iv: 437–439. *Pl.* 20, *fig.* 2.

2168. Pseudothomisus articulatus. (Thomisides.)

Locality: Aix, France. Horizon: Ligurian.

1887. Gourret. Rec. zool. Suisse, iv: 449–451. *Pl.* 21, *figs.* 9–10.

2169. Pythonissa ———. (Drassides.)

Locality: Prussian amber. Horizon: Ligurian.

1845. Berendt. Bernst. befindl. organ. reste vorw., i: 56.

2170. Pythonissa ——— (7 sp.). (Drassides.)

Locality: Prussian amber. Horizon: Ligurian.

1856. Menge. Progr. petrischule Danzig, 1856: 7.

2171. Pythonissa affinis. (Drassides.)

Locality: Prussian amber. Horizon: Ligurian.

1845. Koch-Berendt. Jahrb. min., 1845: 872 (Phytonissa).
1854. " Berendt, Bernst. befindl. organ. reste vorw., i, th. ii: 58–59. *Pl.* 6, *fig.* 48.
1856. Giebel. Insect. d. vorwelt, 454.
See also Philodromus dubius.

2172. Pythonissa ambigua. (Drassides.)

Locality: Prussian amber. Horizon: Ligurian.

1845. Koch-Berendt. Jahrb. min. 1845: 872 (Phytonissa).
1854. " Berendt, Bernst. befindl. organ. reste vorw., i, th. ii: 60. *Pl.* 6, *fig.* 50.
1856. Giebel. Insect. d. vorwelt, 455.

2173. Pythonissa bipunctata. (Drassides.)

Locality: Prussian amber. Horizon: Ligurian.

1854. Menge. Koch-Berendt, Bernst. befindl. organ. reste vorw., i, th. ii: 60.
1856. " Progr. petrischule Danzig, 1856: 8.
1856. Giebel. Insect. d. vorwelt, 456.

2174. **Pythonissa discophora.** (Drassides.)

Locality: Prussian amber. Horizon: Ligurian.

1854. Menge. Koch-Berendt, Bernst. befindl. organ. reste vorw., i, th. ii: 60.
1856. Giebel. Insect. d. vorwelt, 455–456.

2175. **Pythonissa glabra.** (Drassides.)

Locality: Prussian amber. Horizon: Ligurian.

1854. Menge. Koch-Berendt, Bernst. befindl. organ. reste vorw., i, th. ii: 60.
1856. Giebel. Insect. d. vorwelt, 455.

2176. **Pythonissa microcephala.** (Drassides.)

Locality: Prussian amber. Horizon: Ligurian.

1854. Menge. Koch-Berendt, Bernst. befindl. organ. reste vorw., i, th. ii: 82.
1856. Giebel. Insect. d. vorwelt, 455.
See also Philodromus microcephalus.

2177. **Pythonissa sericata.** (Drassides.)

Locality: Prussian amber. Horizon: Ligurian.

1845. Koch-Berendt. Jahrb. min., 1845: 872 (Phytonissa).
1854. " Berendt, Bernst. befindl. organ. reste vorw., i, th. ii: 59. *Pl.* 6, *fig.* 49.
1856. Giebel. Insect. d. vorwelt, 454.
See also Philodromus squamiger.

2178. **Pythonissa spinimana.** (Drassides.)

Locality: Prussian amber. Horizon: Ligurian.

1854. Menge. Koch-Berendt, Bernst. befindl. organ. reste vorw., i, th. ii: 83–84. *Pl.* 9, *fig.* 78.
1856. Giebel. Insect. d. vorwelt, 455.
See also Philodromus spinimanus.

2179. **Pythonissa triguttata.** (Drassides.)

Locality: Prussian amber. Horizon: Ligurian.

1854. Menge. Koch-Berendt, Bernst. befindl. organ. reste vorw., i, th. ii: 86.
1856. Giebel. Insect. d. vorwelt, 455.
See also Ocypete triguttata.

2180. **Pythonissa villosa.** (Drassides.)

Locality: Prussian amber. Horizon: Ligurian.

1854. Menge. Koch-Berendt, Bernst. befindl. organ. reste vorw., i, th. ii: 60.
1856. Giebel. Insect. d. vorwelt, 455.

2181. **Rhyncholophus ———.** (Trombididæ.)

Locality: Prussian amber. Horizon: Ligurian.

1845. Berendt. Bernst. befindl. organ. reste vorw., i: 56.

2182. **Rhyncholophus bifrons.** (Trombididæ.)

Locality: Prussian amber. Horizon: Ligurian.

1854. Menge. Koch-Berendt, Bernst. befindl. organ. reste vorw., i, th. ii: 106.
1856. Giebel. Insect. d. vorwelt, 480.

2183. Rhyncholophus foveolatus. (Trombididæ.)

Locality: Prussian amber. Horizon: Ligurian.

1845. Koch-Berendt. Jahrb. min., 1845: 872.
1854. " Berendt, Bernst. befindl. organ. reste vorw., i, th. ii: 104. *Pl.* 13, *fig.* 102.
1856. Giebel. Insect. d. vorwelt, 479.
1885. Scudder. Zittel, Handb. palaeont., i, th. ii: 734. *Fig.* 907.
1886. " Zittel-Barrois, Traité de paléont., ii: 733. *Fig.* 923.

2184. Rhyncholophus illustris. (Trombididæ.)

Locality: Prussian amber. Horizon: Ligurian.

1845. Koch-Berendt. Jahrb. min., 1845: 872.
1854. " Berendt, Bernst. befindl. organ. reste vorw., i, th. ii: 105. *Pl.* 13, *fig.* 104.
1856. Giebel. Insect. d. vorwelt, 479.

2185. Rhyncholophus incertus. (Trombididæ.)

Locality: Prussian amber. Horizon: Ligurian.

1845. Koch-Berendt. Jahrb. min., 1845: 872.
1854. " Berendt, Bernst. befindl. organ. reste vorw., i, th. ii: 105–106. *Pl.* 13, *fig.* 105.
1856. Giebel. Insect. d. vorwelt, 479.

2186. Rhyncholophus longipes. (Trombididæ.)

Locality: Prussian amber. Horizon: Ligurian.

1845. Koch-Berendt. Jahrb. min., 1845: 872.
1854. " Berendt, Bernst. befindl. organ. reste vorw., i, th. ii: 104–105. *Pl.* 13, *fig.* 103.
1856. Giebel. Insect. d. vorwelt, 479.

2187. Rhyncholophus procerus. (Trombididæ.)

Locality: Prussian amber. Horizon: Ligurian.

1854. Menge. Koch-Berendt, Bernst. befindl. organ. reste vorw., i, th. ii: 106.
1856. Giebel. Insect. d. vorwelt, 480.

2188. Rhyncholophus rostratus. (Trombididæ.)

Locality: Prussian amber. Horizon: Ligurian.

1854. Menge. Koch-Berendt, Bernst. befindl. organ. reste vorw., i, th. ii: 106.
1856. Giebel. Insect. d. vorwelt, 480.

2189. Rhyncholophus saccatus. (Trombididæ.)

Locality: Prussian amber. Horizon: Ligurian.

1854. Menge. Koch-Berendt, Bernst. befindl. organ. reste vorw., i. th. ii: 104.
1856. Giebel. Insect. d. vorwelt, 479.
See also Trombidium saccatum.

2190. Salticus —— (Attoidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1856. Menge. Progr. petrischule Danzig, 1856: 9.

2191. Schellenbergia rotundata. (Therididea.)

Locality: Oeningen, Baden. Horizon: Tortonian.

1865. Heer. Urwelt der Schweiz, 357. *Fig.* 211.
1870. Thorell. European spiders, i: 224.
1872. Heer. Monde prim. Suisse, 437. *Fig.* 211.
1876. " Prim. world Switz., ii: 11. *Fig.* 211 on *p.* 10.
1879. " Urwelt der Schweiz, 2ᵉ aufl., 381. *Fig.* 246.
1885. Scudder. Zittel, Handb. palaeont., i, th. ii: 743. *Fig.* 925.
1886. " Zittel-Barrois, Traité de paléont., ii: 743. *Fig.* 942.

2192 Scorpio schweiggeri. (Scorpiones.)

Compared with S. americanus.

Locality: Prussian amber. Horizon: Ligurian.

1819. Schweigger. Beobacht. naturh. reisen, 117–118 (with no specific name). *Pl.* 8, *figs.* 69, 69*ab*.
1829. Holl. Handb. petref., 177–178.

2193. Segestria ———. (Dysderides.)

Locality: Prussian amber. Horizon: Ligurian.

1845. Berendt. Bernst. befindl. organ. reste vorw., i: 56.

2194. Segestria ———. (Dysderides.)

Locality: Florissant, Colo. Horizon: Oligocene.

1882. Scudder. Harv. univ. bull., ii: 303.

See also Segestria secessa.

2195. Segestria cristata. (Dysderides.)

Locality: Prussian amber. Horizon: Ligurian.

1854. Menge. Koch-Berendt, Bernst. befindl. organ. reste vorw., i, th. ii: 74.
1856. Giebel. Insect. d. vorwelt, 461.

2196. Segestria cylindrica. (Dysderides.)

Locality: Prussian amber. Horizon: Ligurian.

1845. Koch-Berendt. Jahrb. min., 1845: 872.
1854. " Berendt, Bernst. befindl. organ. reste vorw., i, th. ii: 73. *Pl.* 7, *fig.* 66.
1856. Giebel. Insect. d. vorwelt, 461.

2197. Segestria elongata. (Dysderides.)

Locality: Prussian amber. Horizon: Ligurian.

1845. Koch-Berendt. Jahrb. min., 1845: 872.
1854. " Berendt, Bernst. befindl. organ. reste vorw., i, th. ii: 72. *Pl.* 7, *fig.* 65.
1856. Giebel. Insect. d. vorwelt, 460–461.

2198. Segestria exarata. (Dysderides.)

Locality: Prussian amber. Horizon: Ligurian.

1854. Menge. Koch-Berendt. Bernst. befindl. organ. reste vorw., i, th. ii: 74.
1856. Giebel. Insect. d. vorwelt, 461.

2199. Segestria nana. (Dysderides.)

Locality: Prussian amber. Horizon: Ligurian.

1845. Koch-Berendt. Jahrb. min., 1845: 872.
1854. " Berendt, Bernst. befindl. organ. reste vorw., i, th. ii: 73–74. *Pl.* 8, *fig.* 67.
1856. Giebel. Insect. d. vorwelt, 461.
1890. McCook. Amer. spiders, ii: 467. *Fig.* 393.

2200. Segestria pusilla. (Dysderides.)

Locality: Prussian amber. Horizon: Ligurian.

1854. Menge. Koch-Berendt, Bernst. befindl. organ. reste vorw., i, th. ii: 74.
1856. Giebel. Insect. d. vorwelt, 461.

2201. Segestria secessa. (Dysderides.)

Compared with S. senoculata, Europe.

Locality: Florissant, Colo. Horizon: Oligocene.

1890. Scudder. Tert. ins. N. A., 61–62. *Pl.* 11, *fig.* 28.
See also Segestria —— Scudder.

2202. Segestria tomentosa. (Dysderides.)

Compared with S. senoculata, Europe.

Locality: Prussian amber. Horizon: Ligurian.

1845. Koch-Berendt. Jahrb. min., 1845: 872.
1854. " Berendt, Bernst. befindl. organ. reste vorw., i, th. ii: 71–72. *Pl.* 16, *fig.* 140.
1856. Giebel. Insect. d. vorwelt, 460.

2203. Segestria undulata. (Dysderides.)

Locality: Prussian amber. Horizon: Ligurian.

1854. Menge. Koch-Berendt, Bernst. befindl. organ. reste vorw., i, th. ii: 74.
1856. Giebel. Insect. d. vorwelt, 461.

2204. Sejus ——. (Gamasidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1845. Berendt. Bernst. befindl. organ. reste vorw., i: 56.

2205. Sejus bdelloides. (Gamasidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1845. Koch-Berendt. Jahrb. min., 1845: 872.
1854. " Berendt, Bernst. befindl. organ. reste vorw., i, th. ii: 110–111. *Pl.* 13, *fig.* 115.
1856. Giebel. Insect. d. vorwelt, 484.

2206. Siga ——. (Epeirides.)

Locality: Prussian amber. Horizon: Ligurian.

1856. Menge. Progr. petrischule Danzig, 1856: 7.

Siga citrina. See Siga crinita.

2207. Siga crinita. (Epeirides.)

Locality: Prussian amber. Horizon: Ligurian.

1854. Menge. Koch-Berendt, Bernst. befindl. organ. reste vorw., i, th. ii: 27 (undescr.).

1853–'56. Bronn. Lethæa geogn., 3ᵉ aufl., iii: 636 (citrina).
1856. Giebel. Insect. d. vorwelt, 438.
1870. Thorell. European spiders, i: 226.

Scsibius minor. See Sosybius minor.

2208. Sosybius ———. (Drassides.)

Locality: Prussian amber. Horizon: Ligurian.

1845. Berendt. Bernst. befindl. organ. reste vorw., i: 56.

2209. Sosybius ——— (2 sp.). (Drassides.)

Locality: Prussian amber. Horizon: Ligurian.

1856. Menge. Progr. petrischule Danzig, 1856: 8.

2210. Sosybius major. (Drassides.)

Locality: Prussian amber. Horizon: Ligurian.

1845. Koch-Berendt. Jahrb. min., 1845: 872.
1854. " Berendt, Bernst. befindl. organ. reste vorw., i, th. ii: 71. *Pl.* 7, *fig.* 64.
1853–'56. Bronn. Lethæa geogn., 2ᵉ aufl., iii: 629–630. *Pls.* 42'*a*, *fig.* 5.
1856. Giebel. Insect. d. vorwelt, 460.

2211. Sosybius minor. (Drassides.)

Locality: Prussian amber. Horizon: Ligurian.

1845. Koch-Berendt. Jahrb. min., 1845: 872.
1854. " Berendt, Bernst. befindl. organ. reste vorw., i, th. ii: 70. *Pl.* 7, *fig.* 63.
1856. Giebel. Insect. d. vorwelt, 460.
1870. Thorell. European spiders, i: 229 (Sosibius).

2212. Spheconia brevipes. (Drassides.)

Locality: Prussian amber. Horizon: Ligurian.

1854. Menge. Koch-Berendt, Bernst. befindl. organ reste vorw., i, th. ii: 94 (undescr.).
1853–'56. Bronn. Lethæa geogn., 3ᵉ aufl., iii: 638.
1856. Giebel. Insect. d. vorwelt, 469.
1870. Thorell. European spiders, i: 230.

2213. Steneattus promissus. (Attoidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1853–'56. Bronn-Roemer. Bronn's Lethæa geogn., 3ᵉ aufl., iii: 626–627. *Pls.* 42'*a*, *fig.* 2.

See also Leda promissa.

2214. Syphax ———. (Thomisides.)

Locality: Prussian amber. Horizon: Ligurian.

1845. Berendt. Bernst. befindl. organ. reste vorw., i: 56.

2215. Syphax ——— (3 sp.). (Thomisides.)

Locality: Prussian amber. Horizon: Ligurian.

1856. Menge. Progr. petrischule Danzig, 1856: 9.

2199. Segestria nana. (Dysderides.)

Locality: Prussian amber. Horizon: Ligurian.

1845. Koch-Berendt. Jahrb. min., 1845: 872.
1854. " Berendt, Bernst. befindl. organ. reste vorw., i, th. ii: 73–74. *Pl*. 8, *fig*. 67.
1856. Giebel. Insect. d. vorwelt, 461.
1890. McCook. Amer. spiders, ii: 467. *Fig*. 393.

2200. Segestria pusilla. (Dysderides.)

Locality: Prussian amber. Horizon: Ligurian.

1854. Menge. Koch-Berendt, Bernst. befindl. organ. reste vorw., i, th. ii: 74.
1856. Giebel. Insect. d. vorwelt, 461.

2201. Segestria secessa. (Dysderides.)

Compared with S. senoculata, Europe.

Locality: Florissant, Colo. Horizon: Oligocene.

1890. Scudder. Tert. ins. N. A., 61–62. *Pl*. 11, *fig*. 28.
See also Segestria ——— Scudder.

2202. Segestria tomentosa. (Dysderides.)

Compared with S. senoculata, Europe.

Locality: Prussian amber. Horizon: Ligurian.

1845. Koch-Berendt. Jahrb. min., 1845: 872.
1854. " Berendt, Bernst. befindl. organ. reste vorw., i, th. ii: 71–72. *Pl*. 16, *fig*. 140.
1856. Giebel. Insect. d. vorwelt, 460.

2203. Segestria undulata. (Dysderides.)

Locality: Prussian amber. Horizon: Ligurian.

1854. Menge. Koch-Berendt, Bernst. befindl. organ. reste vorw., i, th. ii: 74.
1856. Giebel. Insect. d. vorwelt, 461.

2204. Sejus ———. (Gamasidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1845. Berendt. Bernst. befindl. organ. reste vorw., i: 56.

2205. Sejus bdelloides. (Gamasidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1845. Koch-Berendt. Jahrb. min., 1845: 872.
1854. " Berendt, Bernst. befindl. organ. reste vorw., i, th. ii: 110–111. *Pl*. 13, *fig*. 115.
1856. Giebel. Insect. d. vorwelt, 484.

2206. Siga ———. (Epeirides.)

Locality: Prussian amber. Horizon: Ligurian.

1856. Menge. Progr. petrischule Danzig, 1856: 7.

Siga citrina. See Siga crinita.

2207. Siga crinita. (Epeirides.)

Locality: Prussian amber. Horizon: Ligurian.

1854. Menge. Koch-Berendt, Bernst. befindl. organ. reste vorw., i, th. ii: 27 (undescr.).

1853–'56. Bronn. Lethæa geogn., 3^e aufl., iii: 636 (citrina).
1856. Giebel. Insect. d. vorwelt, 438.
1870. Thorell. European spiders, i: 226.

Sosibius minor. See Sosybius minor.

2208. Sosybius ———. (Drassides.)

Locality: Prussian amber. Horizon: Ligurian.

1845. Berendt. Bernst. befindl. organ. reste vorw., i: 56.

2209. Scsybius ——— (2 sp.). (Drassides.)

Locality: Prussian amber. Horizon: Ligurian.

1856. Menge. Progr. petrischule Danzig, 1856: 8.

2210. Sosybius major. (Drassides.)

Locality: Prussian amber. Horizon: Ligurian.

1845. Koch-Berendt. Jahrb. min., 1845: 872.
1854. " Berendt, Bernst. befindl. organ. reste vorw., i, th. ii: 71. *Pl.* 7, *fig.* 64.
1853–'56. Bronn. Lethæa geogn., 2^e aufl., iii: 629–630. *Pls.* 42'*a*, *fig.* 5.
1856. Giebel. Insect. d. vorwelt, 460.

2211. Sosybius minor. (Drassides.)

Locality: Prussian amber. Horizon: Ligurian.

1845. Koch-Berendt. Jahrb. min., 1845: 872.
1854. " Berendt, Bernst. befindl. organ. reste vorw., i, th. ii: 70. *Pl.* 7, *fig.* 63.
1856. Giebel. Insect. d. vorwelt, 460.
1870. Thorell. European spiders, i: 229 (Sosibius).

2212. Spheconia brevipes. (Drassides.)

Locality: Prussian amber. Horizon: Ligurian.

1854. Menge. Koch-Berendt, Bernst. befindl. organ reste vorw., i, th. ii: 94 (undescr.).
1853–'56. Bronn. Lethæa geogn., 3^e aufl., iii: 638.
1856. Giebel. Insect. d. vorwelt, 469.
1870. Thorell. European spiders, i: 230.

2213. Steneattus promissus. (Attoidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1853–'56. Bronn-Roemer. Bronn's Lethæa geogn., 3^e aufl., iii: 626–627. *Pls.* 42'*a*, *fig.* 2.

See also Leda promissa.

2214. Syphax ———. (Thomisides.)

Locality: Prussian amber. Horizon: Ligurian.

1845. Berendt. Bernst. befindl. organ. reste vorw., i: 56.

2215. Syphax ——— (3 sp.). (Thomisides.)

Locality: Prussian amber. Horizon: Ligurian.

1856. Menge. Progr. petrischule Danzig, 1856: 9.

2216. Syphax fuliginosus. (Thomisides.)

Locality: Prussian amber. Horizon: Ligurian.

1845. Koch-Berendt. Jahrb. min., 1845: 872.
1854. " Berendt, Bernst. befindl. organ. reste vorw., i, th. ii: 79-80. *Pl.* 8, *fig.* 73.
1856. Giebel. Insect. d. vorwelt, 463.
1856. Menge. Progr. petrischule Danzig, 1856: 9.

2217. Syphax gracilis. (Thomisides.)

Locality: Prussian amber. Horizon: Ligurian.

1845. Koch-Berendt. Jahrb. min., 1845: 872.
1854. " Berendt, Bernst. befindl. organ. reste vorw., i, th. ii: 80. *Pl.* 8, *fig.* 74.
1856. Giebel. Insect. d. vorwelt, 464.

2218. Syphax hirtus. Thomisides.)

Locality: Prussian amber. Horizon: Ligurian.

1854. Menge. Koch-Berendt, Bernst. befindl. organ. reste vorw., i, th. ii: 81.
1856. Giebel. Insect. d. vorwelt, 464.

2219. Syphax megacephalus. (Thomisides.)

Locality: Prussian amber. Horizon: Ligurian.

1845. Koch-Berendt. Jahrb. min., 1845: 872.
1854. " Berendt, Bernst. befindl. organ. reste vorw., i, th. ii: 77-78. *Pl.* 8, *fig.* 71.
1856. Giebel. Insect. d. vorwelt, 463.
1870. Thorell. European spiders, i: 231.
1890. McCook. Amer. spiders, ii: 467. *Fig.* 399.

2220. Syphax radiatus. (Thomisides.)

Locality: Prussian amber. Horizon: Ligurian.

1845. Koch-Berendt. Jahrb. min., 1845: 872.
1854. " Berendt, Bernst. befindl. organ. reste vorw., i, th. ii: 80-81. *Pl.* 17, *fig.* 148.

See also Artamus radiatus.

2221. Syphax thoracicus. (Thomisides.)

Locality: Prussian amber. Horizon: Ligurian.

1845. Koch-Berendt. Jahrb. min., 1845: 872.
1854. " Berendt, Bernst. befindl. organ. reste vorw., i, th. ii: 78-79. *Pl.* 8, *fig.* 72.
1853-'56. Bronn. Lethæa geogn., 3^e aufl., iii: 628. *Pls.* 42'*a*, *fig.* 3.
1856. Giebel. Insect. d. vorwelt, 463.

2222. Tegenaria ———. (Agalenides.)

Locality: Prussian amber. Horizon: Ligurian.

1845. Berendt. Bernst. befindl. organ. reste vorw., i: 56.

2223. Tegenaria gracilipes. (Agalenides.)

Locality: Prussian amber. Horizon: Ligurian.

1845. Koch-Berendt. Jahrb. min., 1845: 871.
1854. " Berendt, Bernst. befindl. organ. reste vorw., i, th. ii: 47. *Pl.* 16, *fig.* 139.
1856. Giebel. Insect. d. vorwelt, 448.

2224. Tegenaria lacazei. (Agalenides.)

Locality: Aix, France. Horizon: Ligurian.

1887. Gourret. Rec. zool. Suisse, iv: 469–471. *Pl.* 22, *fig.* 20.

2225. Tegenaria obscura. (Agalenides.)

Locality: Prussian amber. Horizon: Ligurian.

1845. Koch-Berendt. Jahrb. min., 1845: 871.
1854. " Berendt, Bernst. befindl. organ. reste vorw., i, th. ii: 46–47. *Pl.* 5, *fig.* 36.
1856. Giebel. Insect. d. vorwelt, 448.

2226. Tegenaria virilis. (Agalenides.)

Locality: Prussian amber. Horizon: Ligurian.

1854. Menge. Koch-Berendt, Bernst. befindl. organ. reste vorw., i, th. ii: 47.
1856. Giebel. Insect. d. vorwelt, 448.
1856. Menge. Progr. petrischule Danzig, 1856: 7.

Tethnæus hentzii. See Tethneus hentzii.

2227. Tethneus ——— (4 sp.). (Epeirides.)

Locality: Florissant, Colo. Horizon: Oligocene.

1882. Scudder. Harv. univ. bull., ii: 303.
1882. " Field nat., i: 63.
1883. " Ann. rep. U. S. geol. surv. terr., xii: 288.

2228. Tethneus guyoti. (Epeirides.)

Locality: Florissant, Colo. Horizon: Oligocene.

1890. Scudder. Tert. ins. N. A., 78–79. *Pl.* 11, *figs.* 8, 10.

2229. Tethneus hentzii. (Epeirides.)

Locality: Florissant, Colo. Horizon: Oligocene.

1885. Scudder. Zittel, Handb. palaeont., i, th. ii: 744 (Tethnæus). *Fig.* 928.
1886. " Zittel-Barrois, Traité de paléont., ii: 743 (Tethnæus). *Fig.* 945.
1890. " Tert. ins. N. A., 80–81. *Pl.* 11, *fig.* 14.

2230. Tethneus obduratus. (Epeirides.)

Locality: Florissant, Colo. Horizon: Oligocene.

1890. Scudder. Tert. ins. N. A., 79–80. *Pl.* 11, *fig.* 31.

2231. Tethneus provectus. (Epeirides.)

Locality: Florissant, Colo. Horizon: Oligocene.

1890. Scudder. Tert. ins. N. A., 81–82. *Pl.* 11, *fig.* 21.

2232. Tetragnatha ——— (Epeirides.)

Locality: Florissant, Colo. Horizon: Oligocene.

1882. Scudder. Harv. univ. bull., ii: 303.
1882. " Field nat., i: 63.
1883. " Ann. rep. U. S. geol. surv. terr., xii: 288.

See also Tetragnatha tertiaria.

2233. Tetragnatha tertiaria. (Epeirides.)

Locality: Florissant, Colo. Horizon: Oligocene.

1885. Scudder. Zittel, Handb. palaeont., i, th. ii: 744. *Fig.* 927.
1886. " Zittel-Barrois, Traité de paléont., ii: 744. *Fig.* 944.
1890. " Tert. ins. N. A., 77–78. *Pl.* 11, *fig.* 11.
1890. McCook. Amer. spiders, ii: 451.
See also Tetragnatha ———.

2234. Tetranychus ———. (Trombididæ.)

Locality: Prussian amber. Horizon: Ligurian.

1845. Berendt. Bernst. befindl. organ. reste vorw., i: 56.

2235. Tetranychus brevipes. (Trombididæ.)

Locality: Prussian amber. Horizon: Ligurian.

1854. Koch-Berendt. Berendt, Bernst. befindl. organ. reste vorw., i, th. ii: 107. *Pl.* 13, *fig.* 108.
1856. Giebel. Insect. d. vorwelt, 481.

2236. Tetranychus gibbus. (Trombididæ.)

Locality: Prussian amber. Horizon: Ligurian.

1845. Koch-Berendt. Jahrb. min., 1845: 872.
1854. " Berendt, Bernst. befindl. organ. reste vorw., i, th. ii: 107. *Pl.* 13, *fig.* 107.
1856. Giebel. Insect. d. vorwelt, 481.

2237. Textrix ———. (Agalenides.)

Locality: Prussian amber. Horizon: Ligurian.

1845. Berendt. Bernst. befindl. organ. reste vorw., i: 56.

2238. Textrix funesta. (Agalenides.)

Locality: Prussian amber. Horizon: Ligurian.

1845. Koch-Berendt. Jahrb. min., 1845: 871.
1854. " Berendt, Bernst. befindl. organ. reste vorw., i, th. ii: 49–50. *Pl.* 17, *fig.* 146.
1856. Giebel. Insect. d. vorwelt, 449.
1870. Thorell. European spiders, i: 229 (not to Agalenides ?).
See also Clythia funesta.

2239. Textrix lineata.

Locality: Prussian amber. Horizon: Ligurian.

1845. Koch-Berendt. Jahrb. min., 1845: 871.
1854. " Berendt, Bernst. befindl. organ. reste vorw., i, th. ii: 48–49. *Pl.* 17, *fig.* 145.
1856. Giebel. Insect. d. vorwelt, 449.
See also Clythia lineata.

2240. Therea ———. (Dysderides.)

Locality: Prussian amber. Horizon: Ligurian.

1845. Berendt. Bernst. befindl. organ. reste vorw., i: 56.

2241. Therea hispida. (Dysderides.)

Locality: Prussian amber. Horizon: Ligurian.

1845. Koch-Berendt. Jahrb. min., 1845: 872.
1854. " Berendt, Bernst. befindl. organ. reste vorw., i, th. ii: 76–77. *Pl.* 8, *fig.* 70.
1854. Menge. Ibid., 77 (=Melanophora mundula).
See also Melanophora mundula.

2242. Therea petiolata. (Dysderides.)

Locality: Prussian amber. Horizon: Ligurian.

1845. Koch-Berendt. Jahrb. min., 1845: 872.
1845. " Berendt, Bernst. befindl. organ. reste vorw., i, th. ii: 75–76. *Pl.* 8, *fig.* 69.
1853–'56. Bronn. Lethæa geogn., 3^e aufl., iii: 628–629. *Pls.* 42'*a*, *fig.* 4.
1856. Giebel. Insect. d. vorwelt, 462.
1870. Thorell. European spiders, i: 230.

2243. Therea pubescens. (Dysderides.)

Locality: Prussian amber. Horizon: Ligurian.

1854. Menge. Koch-Berendt, Bernst. befindl. organ. reste vorw., i, th. ii: 76.
1856. Giebel. Insect. d. vorwelt, 462.

Theridion annulipes. See Theridium annulipes.

Theridion globulus. See Theridium globulus.

Theridion maculipes. See Theridium maculipes.

Theridiosoma columbiæ. See Aranea columbiæ.

2244. Theridium ——. (Theridides.)

Locality: Prussian amber. Horizon: Ligurian.

1845. Berendt. Bernst. befindl. organ. reste vorw., i: 56.

2245. Theridium —— (8 sp.). (Theridides.)

Locality: Prussian amber. Horizon: Ligurian.

1856. Menge. Progr. petrischule Danzig, 1856: 7.

2246. Theridium —— (2 sp.). (Theridides.)

Locality: Florissant, Colo. Horizon: Oligocene.

1882. Scudder. Harv. univ. bull., ii: 303.
1882. " Field nat., i: 62.
1883. " Ann. rep. U. S. geol. surv. terr., xii: 288.

2247. Theridium alutaceum. (Theridides.)

Locality: Prussian amber. Horizon: Ligurian.

1845. Koch-Berendt. Jahrb. min., 1845: 871.
1854. " Berendt, Bernst. befindl. organ. reste vorw., i, th. ii: 37. *Pl.* 16, *fig.* 135.
1856. Giebel. Insect. d. vorwelt, 443.

2233. Tetragnatha tertiaria. (Epeirides.)

Locality: Florissant, Colo. Horizon: Oligocene.

1885. Scudder. Zittel, Handb. palaeont., i, th. ii: 744. *Fig.* 927.
1886. " Zittel-Barrois, Traité de paléont., ii: 744. *Fig.* 944.
1890. " Tert. ins. N. A., 77-78. *Pl.* 11, *fig.* 11.
1890. McCook. Amer. spiders, ii: 451.
See also Tetragnatha ———.

2234. Tetranychus ———. (Trombididæ.)

Locality: Prussian amber. Horizon: Ligurian.

1845. Berendt. Bernst. befindl. organ. reste vorw., i: 56.

2235. Tetranychus brevipes. (Trombididæ.)

Locality: Prussian amber. Horizon: Ligurian.

1854. Koch-Berendt. Berendt, Bernst. befindl. organ. reste vorw., i, th. ii: 107. *Pl.* 13, *fig.* 108.
1856. Giebel. Insect. d. vorwelt, 481.

2236. Tetranychus gibbus. (Trombididæ.)

Locality: Prussian amber. Horizon: Ligurian.

1845. Koch-Berendt. Jahrb. min., 1845: 872.
1854. " Berendt, Bernst. befindl. organ. reste vorw., i, th. ii: 107. *Pl.* 13, *fig.* 107.
1856. Giebel. Insect. d. vorwelt, 481.

2237. Textrix ———. (Agalenides.)

Locality: Prussian amber. Horizon: Ligurian.

1845. Berendt. Bernst. befindl. organ. reste vorw., i: 56.

2238. Textrix funesta. (Agalenides.)

Locality: Prussian amber. Horizon: Ligurian.

1845. Koch-Berendt. Jahrb. min., 1845: 871.
1854. " Berendt, Bernst. befindl. organ. reste vorw., i, th. ii: 49-50. *Pl.* 17, *fig.* 146.
1856. Giebel. Insect. d. vorwelt, 449.
1870. Thorell. European spiders, i: 229 (not to Agalenides?).
See also Clythia funesta.

2239. Textrix lineata.

Locality: Prussian amber. Horizon: Ligurian.

1845. Koch-Berendt. Jahrb. min., 1845: 871.
1854. " Berendt, Bernst. befindl. organ. reste vorw., i, th. ii: 48-49. *Pl.* 17, *fig.* 145.
1856. Giebel. Insect. d. vorwelt, 449.
See also Clythia lineata.

2240. Therea ———. (Dysderides.)

Locality: Prussian amber. Horizon: Ligurian.

1845. Berendt. Bernst. befindl. organ. reste vorw., i: 56.

2241. **Therea hispida**. (Dysderides.)

Locality: Prussian amber. Horizon: Ligurian.

1845. Koch-Berendt. Jahrb. min., 1845: 872.
1854. " Berendt, Bernst. befindl. organ. reste vorw., i, th. ii: 76–77. *Pl.* 8, *fig.* 70.
1854. Menge. Ibid., 77 (=Melanophora mundula).

See also Melanophora mundula.

2242. **Therea petiolata**. (Dysderides.)

Locality: Prussian amber. Horizon: Ligurian.

1845. Koch-Berendt. Jahrb. min., 1845: 872.
1845. " Berendt, Bernst. befindl. organ. reste vorw., i, th. ii: 75–76. *Pl.* 8, *fig.* 69.
1853–'56. Bronn. Lethæa geogn., 3^{e} aufl., iii: 628–629. *Pls.* 42'*a*, *fig.* 4.
1856. Giebel. Insect. d. vorwelt, 462.
1870. Thorell. European spiders, i: 230.

2243. **Therea pubescens**. (Dysderides.)

Locality: Prussian amber. Horizon: Ligurian.

1854. Menge. Koch-Berendt, Bernst. befindl. organ. reste vorw., i, th. ii: 76.
1856. Giebel. Insect. d. vorwelt, 462.

Theridion annulipes. See Theridium annulipes.

Theridion globulus. See Theridium globulus.

Theridion maculipes. See Theridium maculipes.

Theridiosoma columbiæ. See Aranea columbiæ.

2244. **Theridium** ———. (Theridides.)

Locality: Prussian amber. Horizon: Ligurian.

1845. Berendt. Bernst. befindl. organ. reste vorw., i: 56.

2245. **Theridium** ——— (8 sp.). (Theridides.)

Locality: Prussian amber. Horizon: Ligurian.

1856. Menge. Progr. petrischule Danzig, 1856: 7.

2246. **Theridium** ——— (2 sp.). (Theridides.)

Locality: Florissant, Colo. Horizon: Oligocene.

1882. Scudder. Harv. univ. bull., ii: 303.
1882. " Field nat., i: 62.
1883. " Ann. rep. U. S. geol. surv. terr., xii: 288.

2247. **Theridium alutaceum**. (Theridides.)

Locality: Prussian amber. Horizon: Ligurian.

1845. Koch-Berendt. Jahrb. min., 1845: 871.
1854. " Berendt, Bernst. befindl. organ. reste vorw., i, th. ii: 37. *Pl.* 16, *fig.* 135.
1856. Giebel. Insect. d. vorwelt, 443.

2248. **Theridium annulipes.** (Theridides.)

Locality: Oeningen, Baden. Horizon: Tortonian.

1865. Heer. Urwelt der Schweiz, 356 (Theridion). *Fig.* 212 ("219").
1872. " Monde prim. Suisse, 436. *Fig.* 212, on *p.* 437.
1876. " Prim. world Switz., ii: 9. *Fig.* 212, on *p.* 10.
1879. " Urwelt der Schweiz, 2e aufl., 380. *Fig.* 247 ("254"), on *p.* 381.

2249. **Theridium bifurcum.** (Theridides.)

Locality: Prussian amber. Horizon: Ligurian.

1854. Menge. Koch-Berendt, Bernst. befindl. organ. reste vorw., i, th. ii: 7 (undescr.).
1856. Giebel. Insect. d. vorwelt, 443.

2250. **Theridium bucklandi.** (Theridides.)

Locality: Aix, France. Horizon: Ligurian.

1870. Thorell. European spiders, i: 223.
1890. McCook. Amer. spiders, ii: 458.
See also ——— ——— Buckland.

2251. **Theridium chorius.** (Theridides.)

Locality: Prussian amber. Horizon: Ligurian.

1854. Menge. Koch-Berendt, Bernst. befindl. organ. reste vorw., i, th. ii: 7 (undescr.).
1856. Giebel. Insect. d. vorwelt, 443.

2252. **Theridium clavigerum.** (Theridides.)

Locality: Prussian amber. Horizon: Ligurian.

1854. Menge. Koch-Berendt, Bernst. befindl. organ. reste vorw., i, th. ii: 7 (undescr.).
1856. Giebel. Insect. d. vorwelt, 443.

2253. **Theridium crassipes.** (Theridides.)

Locality: Prussian amber. Horizon: Ligurian.

1854. Menge. Koch-Berendt, Bernst. befindl. organ. reste vorw., i, th. ii: 7 (undescr.).
1856. Giebel. Insect. d. vorwelt, 443.

2254. **Theridium detersum.** (Theridides.)

Compared with T. lunatum.

Locality: Prussian amber. Horizon: Ligurian.

1845. Koch-Berendt. Jahrb. min., 1845: 871.
1854. " Berendt, Bernst. befindl. organ. reste vorw., i, th. ii: 37. *Pl.* 17, *fig.* 144.
1856. Giebel. Insect. d. vorwelt, 443.

2255. **Theridium globosum.** (Theridides.)

Locality: Prussian amber. Horizon: Ligurian.

1854. Menge. Koch-Berendt, Bernst. befindl. organ. reste vorw., i, th. ii: 8.
See also Mizalia globosa.

2256. Theridium globulus. (Theridides.)

Locality: Oeningen, Baden. Horizon: Tortonian.

1865. Heer. Urwelt der Schweiz, 356 (Theridion). *Fig.* 220.
1872. " Monde prim. Suisse, 436. *Fig.* 220, on *p.* 437.
1876. " Prim. world Switz., ii: 9. *Fig.* 220, on *p.* 10.
1879. " Urwelt der Schweiz, 2^{e} aufl., 380. *Fig.* 255, on *p.* 381.

2257. Theridium granulatum. (Theridides.)

Locality: Prussian amber. Horizon: Ligurian.

1845. Koch-Berendt. Jahrb. min., 1845: 871.
1854. " Berendt, Bernst. befindl. organ. reste vorw., i, th. ii: 36. *Pl.* 4, *fig.* 26.
1856. Giebel. Insect. d. vorwelt, 443.

2258. Theridium hirtum. (Theridides.)

Locality: Prussian amber. Horizon: Ligurian.

1845. Koch-Berendt. Jahrb. min., 1845: 871.
1854. " Berendt, Bernst. befindl. organ. reste vorw., i, th. ii: 35–36. *Pl.* 4, *fig.* 25.
1856. Giebel. Insect. d. vorwelt, 442–443.
1890. McCook. Amer. spiders, ii: 467. *Fig.* 398.

2259. Theridium maculipes. (Theridides.)

Locality: Oeningen, Baden. Horizon: Tortonian.

1865. Heer. Urwelt der Schweiz. (Theridion). *Fig.* 219 on *p.* 356.
1872. " Monde prim. Suisse. *Fig.* 219 on *p.* 437.
1876. " Prim. world Switz., ii. *Fig.* 219 on *p.* 10.
1870. Thorell. European spiders, i: 224.
1879. Heer. Urwelt der Schweiz, 2^{e} aufl. *Fig.* 254 on *p.* 381.

2260. Theridium opertaneum. (Theridides.)

Compared with T. granulatum.

Locality: Florissant, Colo. Horizon: Oligocene.

1890. Scudder. Tert. ins. N. A., 73–74. *Pl.* 11, *fig.* 3.

2261. Theridium ovale. (Theridides.)

Locality: Prussian amber. Horizon: Ligurian.

1845. Koch-Berendt. Jahrb. min., 1845: 871.
1854. " Berendt, Bernst. befindl. organ. reste vorw., i, th. ii: 34. *Pl.* 4, *fig.* 23.
1856. Giebel. Insect. d. vorwelt, 442.

2262. Theridium ovatum. (Theridides.)

Locality: Prussian amber. Horizon: Ligurian.

1845. Koch-Berendt. Jahrb. min., 1845: 871.
1854. " Berendt, Bernst. befindl. organ. reste vorw., i, th. ii: 33–34. *Pl.* 4, *fig.* 22.
1856. Giebel. Insect. d. vorwelt, 442.

2263. Theridium seclusum. (Theridides.)

Compared with T. hirtum.

Locality: Florissant, Colo. Horizon: Oligocene.

1890. Scudder. Tert. ins. N. A., 74. *Pl.* 11, *fig.* 20.

2264. Theridium setulosum. (Theridides.)

Locality: Prussian amber. Horizon: Ligurian.

1854. Menge. Koch-Berendt, Bernst. befindl. organ. reste vorw., i, th. ii: 7 (undescr.).
1856. Giebel. Insect. d. vorwelt, 443.

2265. Theridium simplex. (Theridides.)

Locality: Prussian amber. Horizon: Ligurian.

1845. Koch-Berendt. Jahrb. min., 1845: 871.
1854. " Berendt, Bernst. befindl. organ. reste vorw., i, th. ii: 35. *Pl.* 4, *fig.* 24.
1856. Giebel. Insect. d. vorwelt, 442.

2266. Thomisus —— (3 sp.). (Thomisides.)

Locality: Florissant, Colo. Horizon: Oligocene.

1882. Scudder. Harv. univ. bull., ii: 303.
1882. " Field nat., i: 62.
1883. " Ann. rep. U. S. geol. surv. terr., xii: 287.

2267. Thomisus defossus. (Thomisides.)

Locality: Florissant, Colo. Horizon: Oligocene.

1890. Scudder. Tert. ins. N. A., 59–60. *Pl.* 11, *fig.* 23.

2268. Thomisus disjunctus. (Thomisides.)

Locality: Florissant, Colo. Horizon: Oligocene.

1890. Scudder. Tert. ins. N. A., 58–59. *Pl.* 11, *fig.* 9.

2269. Thomisus lividus. (Thomisides.)

Locality: Oeningen, Baden. Horizon: Tortonian.

1865. Heer. Urwelt der Schweiz, 356. *Fig.* 216.
1872. " Monde prim. Suisse, 436. *Fig.* 216 on *p.* 437.
1876. " Prim. world Switz., ii: 9. *Fig.* 216 on *p.* 10.
1879. " Urwelt der Schweiz, 2^e^ aufl., 380. *Fig.* 251 on *p.* 381.

2270. Thomisus matutinus. (Thomisides.)

Locality: Prussian amber. Horizon: Ligurian.

1856. Menge. Progr. petrischule Danzig, 1856: 9 (undescr.).

2271. Thomisus œningensis. (Thomisides.)

Locality: Oeningen, Baden. Horizon: Tortonian.

1865. Heer. Urwelt der Schweiz, 356. *Fig.* 215.
1872. " Monde prim. Suisse, 436. *Fig.* 215 on *p.* 437.
1876. " Prim. world Switz., ii: 9. *Fig.* 215 on *p.* 10.
1879. " Urwelt der Schweiz, 2e aufl., 380. *Fig.* 250 on *p.* 381.
1885. Scudder. Zittel, Handb. palaeont., i, th. ii: 742. *Fig.* 920.
1886. " Zittel-Barrois, Traité de paléont., ii: 741. *Fig.* 937.

See also Xysticus œningensis.

2272. Thomisus resutus. (Thomisides.)

Locality: Florissant, Colo. Horizon: Oligocene.

1890. Scudder Tert. ins. N. A., 57–58. *Pl.* 11, *fig.* 13.

2273. Thomisus sulzeri. (Thomisides.)

Locality: Oeningen, Baden. **Horizon:** Tortonian.

1865. Heer. Urwelt der Schweiz, 356. *Fig.* 217.
1872. " Monde prim. Suisse, 436. *Fig.* 217 on *p.* 437.
1876. " Prim. world Switz., ii : 9. *Fig.* 217 on *p.* 10.
1879. " Urwelt der Schweiz, 2te aufl., 380. *Fig.* 252 on *p.* 381.

2274. Thyelia ———. (Theridides.)

Locality: Prussian amber. **Horizon:** Ligurian.

1845. Berendt. Bernst. befindl. organ. reste vorw., i : 56.

2275. Thyelia ——— (8 sp.). (Theridides.)

Locality: Prussian amber. **Horizon:** Ligurian.

1856. Menge. Progr. petrischule Danzig, 1856 : 7.

2276. Thyelia anomala. (Theridides.)

Locality: Prussian amber. **Horizon:** Ligurian.

1845. Koch-Berendt. Jahrb. min., 1845 : 872.
1854. " Berendt, Bernst. befindl. organ. reste vorw., i, th. ii : 52. *Pl.* 5, *fig.* 39.
1856. Giebel. Insect. d. vorwelt, 451.
1870. Thorell. European spiders, i : 227 (probably not a Thyelia).

2277. Thyelia convexa. (Theridides.)

Locality: Prussian amber. **Horizon:** Ligurian.

1845. Koch-Berendt. Jahrb. min., 1845 : 872.
1854. " Berendt, Bernst. befindl. organ. reste vorw., i, th. ii : 54–55. *Pl.* 5, *fig.* 43.
1856. Giebel. Insect. d. vorwelt, 452.

2278. Thyelia fossula. (Theridides.)

Locality: Prussian amber. **Horizon:** Ligurian.

1845. Koch-Berendt. Jahrb. min., 1845 : 872.
1854. " Berendt, Bernst. befindl. organ. reste vorw., i, th. ii : 54. *Pl.* 5, *fig.* 42.
1856. Giebel. Insect. d. vorwelt, 451–452.

2279. Thyelia marginata. (Theridides.)

Locality: Prussian amber. **Horizon:** Ligurian.

1845. Koch-Berendt. Jahrb. min., 1845 : 872.
1854. " Berendt, Bernst. befindl. organ. reste vorw., i, th. ii : 56. *Pl.* 6, *fig.* 45.
1856. Giebel. Insect. d. vorwelt, 452.
1870. Thorell. European spiders, i : 227 (probably not a Thyelia).

2280. Thyelia mengei. (Theridides.)

Locality: Prussian amber. **Horizon:** Ligurian.

1856. Giebel. Insect. d. vorwelt, 452–453.

2281. Thyelia pallida. (Theridides.)

Locality: Prussian amber. **Horizon:** Ligurian.

1845. Koch-Berendt. Jahrb. min., 1845 : 872.
1854. " Berendt, Bernst. befindl. organ. reste vorw., i, th. ii : 55. *Pl.* 6, *fig.* 44.
1856. Geibel. Insect. d. vorwelt, 452.

2282. Thyelia pectinata. (Theridides.)

Locality: Prussian amber. Horizon: Ligurian.

1854. Menge. Koch-Berendt, Bernst. befindl. organ. reste vorw., i, th. ii: 56.
1856. Giebel. Insect. d. vorwelt, 453

2283. Thyelia scotina. (Theridides.)

Locality: Prussian amber. Horizon: Ligurian.

1845. Koch-Berendt. Jahrb. min., 1845: 872.
1854. " Berendt, Bernst. befindl. organ. reste vorw., i, th. ii: 53. *Pl.* 5, *fig.* 41.
1856. Giebel. Insect. d. vorwelt, 451.

2284. Thyelia spinosa. (Theridides.)

Locality: Prussian amber. Horizon: Ligurian.

1854. Menge. Koch-Berendt, Bernst. befindl. organ. reste vorw., i, th. ii: 56.
1856. Giebel. Insect. d. vorwelt, 453.

2285. Thyelia tristis. (Theridides.)

Locality: Prussian amber. Horizon: Ligurian.

1845. Koch-Berendt. Jahrb. min., 1845: 872.
1854. " Berendt, Bernst. befindl. organ. reste vorw., i, th. ii: 51–52. *Pl.* 5, *fig.* 38.
1853–'56. Bronn. Lethæa geogn., 3^{e} aufl., iii: 630–631. *Pls.* 42'*a*, *fig.* 6.
1856. Giebel. Insect. d. vorwelt, 451.
1870. Thorell. European spiders, i: 227.

2286. Thyelia villosa. (Theridides.)

Locality: Prussian amber. Horizon: Ligurian.

1845. Koch-Berendt. Jahrb. min., 1845: 872.
1854. " Berendt, Bernst. befindl. organ. reste vorw., i, th. ii: 53. *Pl.* 5, *fig.* 40.
1856. Giebel. Insect. d. vorwelt, 451.

2287. Titanœca —— (2 sp.). (Agalenides.)

Locality: Florissant, Colo. Horizon: Oligocene.

1882. Scudder. Harv. univ. bull., ii: 303.
1882. " Field nat., i: 62.
1883. " Ann. rep. U. S. geol. surv. terr., xii: 288.

2288. Titanœca hesterna. (Agalenides.)

Locality: Florissant, Colo. Horizon: Oligocene.

1890. Scudder. Tert. ins. N. A., 69–70.

2289. Titanœca ingenua. (Agalenides.)

Locality: Florissant, Colo. Horizon: Oligocene.

1890. Scudder. Tert. ins. N. A., 69. *Pl.* 11, *figs.* 29, 32.

2290. Tityus eogenus. (Buthoidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1869. Menge. Scorp. (Schrift. naturf. gesellsch. Danzig, ii, th. ii), 3–6. *Figs.* *a–c.*

1885. Scudder. Zittel, Handb. palaeont., i, th. ii: 740.
1886. " Zittel-Barrois, Traité de paléont., ii: 740.
1886. " Bull. U. S. geol. surv., No. 31: 29.

2291. Trombidium ——. (Trombididæ.)

Locality: Prussian amber. Horizon: Ligurian.

1830. Berendt. Insekten im bernstein, 36.
1845. " Bernst. befindl. organ. reste vorw., i: 56.

2292. Trombidium aquaticum (recent). (Trombididæ.)

Locality: Prussian amber. Horizon: Ligurian.

[**1793.** Fabricius. Ent. syst., iii: 399.]
1830. Berendt. Insekten im bernstein, 38.
1839. Brullé. Gisem. ins. foss., 19.

2293. Trombidium clavipes. (Trombididæ.)

Locality: Prussian amber. Horizon: Ligurian.

1845. Koch-Berendt. Jahrb. min., 1845: 872.
1854. " Berendt, Bernst. befindl. organ. reste vorw., i, th. ii: 103. *Pl.* 17, *fig.* 150.
1856. Giebel. Insect. d. vorwelt, 478.
1884. Karsch. Berl. entom. zeitschr., xxviii: 175.

2294. Trombidium crassipes. (Trombididæ.)

Locality: Prussian amber. Horizon: Ligurian.

1854. Menge. Koch-Berendt, Bernst. befindl. organ. reste vorw., i, th. ii: 104.
1856. Giebel. Insect. d. vorwelt, 478.
1885. Karsch. Berl. entom. zeitschr., xxviii: 175.

2295. Trombidium fossile. (Trombididæ.)

Locality: Prussian amber. Horizon: Ligurian.

1834. Keferstein. Naturg. erdkörp., ii: 371 (undescr.) (Trompidium).

2296. Trombidium granulatum. (Trombididæ.)

Locality: Prussian amber. Horizon: Ligurian.

1854. Menge. Koch-Berendt, Bernst. befindl. organ. reste vorw., i, th. ii: 104.
1856. Giebel. Insect. d. vorwelt, 478.

2297. Trombidium heterotrichum. (Trombididæ.)

Locality: Prussian amber. Horizon: Ligurian.

1854. Menge. Koch-Berendt, Bernst. befindl. organ. reste vorw., i, th. ii: 104.
1856. Giebel. Insect. d. vorwelt, 478.

2298. Trombidium saccatum. (Trombididæ.)

Locality: Prussian amber. Horizon: Ligurian.

1845. Koch-Berendt. Jahrb. min., 1845: 872.
1854. " Berendt, Bernst. befindl. organ. reste vorw., i, th. ii: 103. *Pl.* 17, *fig.* 151.

See also Rhyncolophus saccatus.

2299. Trombidium scrobiculatum. (Trombididæ.)

Compared with T. fuliginosum.

Locality: Prussian amber. Horizon: Ligurian.

1854. Menge. Koch-Berendt, Bernst. befindl. organ. reste vorw., i, th. ii: 104.
1856. Giebel. Insect. d. vorwelt, 478.

Trompidium fossile. See Trombidium fossile.

2300. Uroctea galloprovincialis. (Urocteoidæ.)

Compared with U. (Clotho) durandi Walck.

Locality: Aix, France. Horizon: Ligurian.

1887. Gourret. Rec. zool. Suisse, iv: 462–464. *Pl.* 22, *fig.* 19.

2301. Xysticus annulipes. (Thomisides.)

Locality: Rott, Rhenish Prussia. Horizon: Aquitanian.

1878. Bertkau. Verhandl. naturh. ver. preuss. rheinl., (4), v: 359–360. *Pl.* 5, *figs.* 7, 7*a*.

2302. Xysticus œningensis. (Thomisides.)

Locality: Oeningen, Baden. Horizon: Tortonian.

1870. Thorell. European spiders, i: 224.
See also Thomisus œningensis.

2303. Zilla ——. (Theridides.)

Locality: Prussian amber. Horizon: Ligurian.

1845. Berendt. Bernst. befindl. organ. reste vorw., i: 56.

2304. Zilla —— (3 sp.). (Theridides.)

Locality: Prussian amber. Horizon: Ligurian.

1856. Menge. Progr. petrischule Danzig, 1856: 7.

2305. Zilla cornumana. (Theridides.)

Locality: Prussian amber. Horizon: Ligurian.

1854. Menge. Koch-Berendt, Bernst. befindl. organ. reste vorw., i, th. ii: 27 (undescr.).
1856. Giebel. Insect. d. vorwelt, 438.

2306. Zilla gracilis. (Theridides.)

Locality: Prussian amber. Horizon: Ligurian.

1845. Koch-Berendt. Jahrb. min., 1845: 871.
1854. " Berendt, Bernst. befindl. organ. reste vorw., i, th. ii: 26. *Pl.* 3, *fig.* 15.
1856. Giebel. Insect. d. vorwelt, 437.
1890. McCook. Amer. spiders, ii: 467. *Fig.* 390.

2307. Zilla porrecta. (Theridides.)

Locality: Prussian amber. Horizon: Ligurian.

1845. Koch-Berendt. Jahrb. min., 1845: 871.
1854. " Berendt, Bernst. befindl. organ. reste vorw., i, th. ii: 25–26. *Pl.* 3, *fig.* 14.
1856. Giebel. Insect. d. vorwelt, 437.
1890. McCook. Amer. spiders, ii: 467. *Fig.* 389.

2308 Zilla spinipalpa. (Theridides.)

Locality: Prussian amber Horizon: Ligurian.

1854. Menge. Koch-Berendt, Bernst. befindl. organ. reste vorw., i, th. ii: 27 (undescr.).
1856. Giebel. Insect. d. vorwelt, 438.

2309. Zilla veterana. (Theridides.)

Locality: Prussian amber. Horizon: Ligurian.

1845. Koch-Berendt. Jahrb. min., 1845: 871.
1854. " Berendt, Bernst. befindl. organ. reste vorw., i, th. ii: 26–27. *Pl* 3, *fig*. 16.
1856. Giebel. Insect. d. vorwelt, 437–438.

HEXAPODA.

2310. ——— ———.

Locality: Serzanne, Marne, France. Horizon: Lower Eocene.

1878. Goss. Proc. geol. assoc., v: 214, note.
1878. " Ins. fauna tert. per., 36, note.
1879. " Ent. monthl. mag., xvi: 125, note.
1880. " Geol. ant. ins., 37, note.

ORTHOPTERA.

2311. ——— ———.

Locality: Menat, France. Horizon: Aquitanian.

1870. Oustalet. Ann. sc. géol., ii: art. 3, 78–79. *Pl*. 2, *fig*. 1.

2312. ——— ———.

Locality: Gurnet Bay, Isle of Wight. Horizon: Bembridge Limestone.

1879. Woodward. Geol. mag. (n. s.), v: 88.

2313. ——— ——— (several). (Acridii.)

Locality: Florissant, Colo. Horizon: Oligocene.

1881. Scudder. Bull. U. S. geol. surv. terr., vi: 293.
1883. " Ann. rep. U. S. geol. surv. terr., xii: 283.

2314. ——— ———. (Acridii.)

Locality: Gurnet Bay, Isle of Wight. Horizon: Bembridge Limestone.

1879. Woodward. Quart. journ. geol. soc. Lond., xxxv: 344.

2315. ——— ———. (Blattariæ.)

Locality: Rouffach, Alsatia. Horizon: Tongrien.

1881. Bleicher. Bull. soc. géol. Fr., (3), viii: 226–227. (Probably isopod crust., perhaps Blattariæ.)

2316. ——— ———. (Blattariæ.)

Compared with Blatta germanica.

Locality: Prussian amber. Horizon: Ligurian.

1832. Burmeister. Handb. ent., i: 637.
1836. " Man. ent., 579.

2317. ——— ———. (Blattariæ.)

Compared with Periplaneta americana.

Locality: Brunstatt, Alsatia. Horizon: Middle Oligocene.

1889. Foerster. Mitth. comm. geol. Elsass-Lothr., ii: 101.

2318. ——— ———. (Blattariæ.)

Locality: Prussian amber. Horizon: Ligurian.

1819. Schweigger. Beobacht. naturh. reisen, 113. *Pl.* 8, *figs.* 71, 71*ab*.

2319. ——— ——— (several). (Blattariæ.)

Locality: Florissant, Colo. Horizon: Oligocene.

1881. Scudder. Bull. U. S. geol. surv. terr., vi: 293.
1883. " Ann. rep. U. S. geol. surv. terr., xii: 283.

2320. ——— ——— (several). (Forficulariæ.)

Locality: Florissant, Colo. Horizon: Oligocene.

1881. Scudder. Bull. U. S. geol. surv. terr., vi: 293.
1883. " Ann. rep. U. S. geol. surv. terr., xii: 283.

2321. ——— ———. (Locustariæ.)

Locality: Prussian amber. Horizon: Ligurian.

1856. Germ.-Ber. Berendt, Bernst. befindl. organ. reste vorw., 31–32. *Pl.* 4, *figs.* 7*a–d*.

2322. ——— ——— (leg). (Locustariæ.)

Compared with Phylloptera.

Locality: Green River, Wyo. Horizon: Oligocene.

1878. Scudder. Bull. U. S. geol. surv. terr., iv: 774.
1890. " Tert. ins. N. A., 234.

2323. ——— ——— (several). (Locustariæ.)

Locality: Florissant, Colo. Horizon: Oligocene.

1881. Scudder. Bull. U. S. geol. surv. terr., vi: 293.
1883. " Ann. rep. U. S. geol. surv. terr., xii: 282–283.

2324. ——— ———. (Phasmida.)

Locality: Florissant, Colo. Horizon: Oligocene.

1881. Scudder. Bull. U. S. geol. surv. terr., vi: 293.
1883. " Ann. rep. U. S. geol. surv. terr., xii: 283.

2325. Acheta ———. (Gryllides.)

Locality: Prussian amber. Horizon: Ligurian.

1832. Burmeister. Handb. ent., i: 637 (Acheten).
1836. " Man. ent., 579.

2326. Acheta ———. (Gryllides.)

Compared with A. campestris.

Locality: Aix, France. Horizon: Ligurian.

1829. Serres. Géogn. terr. tert., 226.

2327. Acheta ——. (Gryllides.)

Compared with A. italica.

Locality: Aix, France. Horizon: Ligurian.

.829. Serres. Géogn. terr. tert., 226.

2328. Acheta ——. (Gryllides.)

Compared with A. sylvestris.

Locality: Aix, France. Horizon: Ligurian.

1829. Serres. Géogn. terr. tert., 226.

2329. Acridium ——. (Acridii.)

Locality: Radoboj, Croatia. Horizon: Mayencian.

1831. Boué. Journ. géol., iii: 105, 143. *Pl.* 2, *fig.* 2.

2330. Acridium ——. (Acridii.)

Locality: Radoboj, Croatia. Horizon: Mayencian.

1842–'43. Unger. Chloris protogæa, 46. *Pl.* 15, *fig.* 2.
See also Gryllacris ungeri.

2331. Acridium barthelemyi. (Acridii.)

Locality: Aix, France. Horizon: Ligurian.

1885. Scudder. Zittel, Handb. palaeont., i, th. ii: 768.
1886. " Zittel-Barrois, Traité de paléont, ii: 768.
1886. " Bull. U. S. geol. surv., No. 31: 49.
1890. " Tert. ins. N. A., 220.
See also Acridium (Gryllus) barthelemyi.

2332. Acridium (Gryllus) barthelemyi. (Acridii.)

Locality: Aix, France. Horizon: Ligurian.

1847. Hope. Descr. ins. foss., 5–6 (Grillus). *Pl.*, *fig.* 2.
See also Acridium barthelemyi.

2333. Agathemera ——. (Phasmida.)

Locality: Florissant, Colo. Horizon: Oligocene.

1885. Scudder. Zittel, Handb. palaeont., i, th. ii: 767.
1886. " Zittel-Barrois, Traité de paléont., ii: 768.
1886. " Bull. U. S. geol. surv., No. 31: 49.
See also Agathemera reclusa.

2334. Agathemera reclusa. (Phasmida.)

Locality: Florissant, Colo. Horizon: Oligocene.

1890. Scudder. Tert. ins. N. A., 219–220. *Pl.* 17, *fig.* 11.
See also Agathemera ——.

Arnilia ——. See Leptysma ——.

2335. Bacteria ——. (Phasmida.)

Locality: Prussian amber. Horizon: Ligurian.

1856. Menge. Progr. petrischule Danzig, 1856: 13.

2336. Blatta ——. (Blattariæ.)

Locality: Prussian amber. Horizon: Ligurian.

1830. Berendt. Insekten im bernstein, 36–37.

2337. Blatta ——. (Blattariæ.)

Locality: Prussian amber. Horizon: Ligurian.

1836. Berendt. Ann. soc. ent. Fr., v: 541–542. *Pl.* 16, *fig.* 1.

2338. Blatta ——. (Blattariæ.)

Locality: Prussian amber. Horizon: Ligurian.

1836. Berendt. Ann. soc. ent. Fr., v: 543. *Pl.* 16, *fig.* 3.
1856. Germ.-Ber. Berendt, Bernst. befindl. organ. reste vorw. *Pl.* 4, *figs.* 3a–d.

2339. Blatta ——. (Blattariæ.)

Locality: Prussian amber. Horizon: Ligurian.

1836. Berendt. Ann. soc. ent. Fr., v: 543–544. *Pl.* 16, *fig.* 4.

2340. Blatta ——. (Blattariæ.)

Locality: Prussian amber. Horizon: Ligurian.

1836. Berendt. Ann. soc. ent. Fr., v: 544. *Pl.* 16, *fig.* 5.

2341. Blatta ——. (Blattariæ.)

Locality: Prussian amber. Horizon: Ligurian.

1836. Berendt. Ann. soc. ent. Fr., v: 544–545. *Pl.* 16, *fig.* 6.

2342. Blatta ——. (Blattariæ.)

Locality: Prussian amber. Horizon: Ligurian.

1836. Berendt. Ann. soc. ent. Fr., v: 544–545. *Pl.* 16, *fig.* 7.

2343. Blatta ——. (Blattariæ.)

Locality: Copal. Horizon: Recent.

1776. Bloch. Beschäft. berl. gesellsch. naturf. freunde, ii: 174–177. *Pl.* 4, *fig.* 17.

2344. Blatta ——. (Blattariæ.)

Compared with B. germanica.

Locality: Prussian amber. Horizon: Ligurian.

1831. Burmeister. Oken, Isis, 1831: 1100.
1836. " Man. ent., 579.

2345. Blatta ——. (Blattariæ.)

Locality: Brunstatt, Alsatia. Horizon: Middle Oligocene.

1890. Foerster. In litt.

2346. Blatta ——. (Blattariæ.)

Locality: Eisleben, Rhenish Prussia. Horizon: Aquitanian?.

1856. Giebel. Zeitschr. ges. naturw., vii: 385–386. *Pl.* 5, *fig.* 3.

2347. Blatta ——. (Blattariæ.)

Locality: Prussian amber. Horizon: Ligurian.

1835. Gravenhorst. Uebers. schles. gesellsch. vaterl. cult., 1834: 93.

2348. Blatta ——. (Blattariæ.)

Locality: Sicilian amber. Horizon: ——.

1838. Guérin. Rev. zool., 1838: 170.

2349. Blatta ——. (Blattariæ.)

Locality: Oeningen, Baden. Horizon: Tortonian.

1834. **Keferstein.** Naturg. erdkörp., ii: 331.

2350. Blatta ——. (Blattariæ.)

Locality: Prussian amber. Horizon: Ligurian.

1856. **Menge.** Progr. petrischule Danzig, 1856: 12–13.

2351. Blatta ——. (Blattariæ.)

Locality: Prussian amber. Horizon: Ligurian.

1820. **Schlotheim.** Petrefactenk., 43.

2352. Blatta baltica. (Blattariæ.)

Compared with B. lapponica.

Locality: Prussian amber. Horizon: Ligurian.

1836. **Berendt.** Ann. soc. ent. Fr., v: 543–546 (unnamed). *Pl.* 16, *figs.* 4, 5, 7.
1856. **Germ.-Ber.** Berendt, Bernst. befindl. organ. reste vorw., ii, i: 32, 34 (=Blattina succinea Germ. ?). *Pl.* 4, *fig.* 5.
1864. **Heer.** Viert. naturf. gesellsch. Zürich, ix: 291.
1877. **Goldenberg.** Fauna saræp. foss., ii: 21.

See also Blattina succinea, Blatta succinea.

2353. Blatta berendti. (Blattariæ.)

Locality: Prussian amber. Horizon: Ligurian.

1856. **Giebel.** Insect. d. vorwelt, 322–323.

2354. Blatta colorata. (Blattariæ.)

Locality: Oeningen, Baden. Horizon: Tortonian.

1865. **Heer.** Urwelt der Schweiz. *Fig.* 229, on *p.* 366.
1872. " Monde prim. Suisse. *Fig.* 229, on *p.* 449.
1876. " Prim. world Switz., ii. *Fig.* 229, on *p.* 21.
1879. " Urwelt der Schweiz, 2e aufl. *Fig.* 270, on *p.* 392.

See also Blattidium coloratum.

2355. Blatta didyma. (Blattariæ.)

Compared with B. lapponica.

Locality: Prussian amber. Horizon: Ligurian.

1856. **Germ.-Ber.** Berendt, Bernst. befindl. organ. reste vorw., ii, i: 34–35. *Pl.* 4, *fig.* 6.
1864. **Heer.** Viert. naturf. gesellsch. Zürich, ix: 291.
1877. **Goldenberg.** Fauna saræp. foss., ii: 21.

See also I, ORTHOPT., Blattina didyma.

2356. Blatta elliptica. (Blattariæ.)

Locality: Prussian amber. Horizon: Ligurian.

1862. **Giebel.** Zeitschr. ges. naturw., xx: 315–316.

2357. Blatta gedanensis. (Blattariæ.)

Locality: Prussian amber. Horizon: Ligurian.

1836. **Berendt.** Ann. soc. ent. Fr., v: 544–546. *Pl.* 16, *fig.* 6.
1856. **Germ.-Ber.** Berendt, Bernst. befindl. organ. reste vorw., ii, i: 33–34. *Pl.* 4, *fig.* 4.
1864. **Heer.** Viert. naturf. gesellsch. Zürich, ix: 291.
1877. **Goldenberg.** Fauna saræp. foss., ii: 21.

2337. Blatta ——. (Blattariæ.)

Locality: Prussian amber. Horizon: Ligurian.
1836. Berendt. Ann. soc. ent. Fr., v: 541–542. *Pl.* 16, *fig.* 1.

2338. Blatta ——. (Blattariæ.)

Locality: Prussian amber. Horizon: Ligurian.
1836. Berendt. Ann. soc. ent. Fr., v: 543. *Pl.* 16, *fig.* 3.
1856. Germ.-Ber. Berendt, Bernst. befindl. organ. reste vorw. *Pl.* 4, *figs.* 3*a*–*d*.

2339. Blatta ——. (Blattariæ.)

Locality: Prussian amber. Horizon: Ligurian.
1836. Berendt. Ann. soc. ent. Fr., v: 543–544. *Pl.* 16, *fig.* 4.

2340. Blatta ——. (Blattariæ.)

Locality: Prussian amber. Horizon: Ligurian.
1836. Berendt. Ann. soc. ent. Fr., v: 544. *Pl.* 16, *fig.* 5.

2341. Blatta ——. (Blattariæ.)

Locality: Prussian amber. Horizon: Ligurian.
1836. Berendt. Ann. soc. ent. Fr., v: 544–545. *Pl.* 16, *fig.* 6.

2342. Blatta ——. (Blattariæ.)

Locality: Prussian amber. Horizon: Ligurian.
1836. Berendt. Ann. soc. ent. Fr., v: 544–545. *Pl.* 16, *fig.* 7.

2343. Blatta ——. (Blattariæ.)

Locality: Copal. Horizon: Recent.
1776. Bloch. Beschäft. berl. gesellsch. naturf. freunde, ii: 174–177. *Pl.* 4, *fig.* 17.

2344. Blatta ——. (Blattariæ.)

Compared with B. germanica.

Locality: Prussian amber. Horizon: Ligurian.
1831. Burmeister. Oken, Isis, 1831: 1100.
1836. " Man. ent., 579.

2345. Blatta ——. (Blattariæ.)

Locality: Brunstatt, Alsatia. Horizon: Middle Oligocene.
1890. Foerster. In litt.

2346. Blatta ——. (Blattariæ.)

Locality: Eisleben, Rhenish Prussia. Horizon: Aquitanian?.
1856. Giebel. Zeitschr. ges. naturw., vii: 385–386. *Pl.* 5, *fig.* 3.

2347. Blatta ——. (Blattariæ.)

Locality: Prussian amber. Horizon: Ligurian.
1835. Gravenhorst. Uebers. schles. gesellsch. vaterl. cult., 1834: 93.

2348. Blatta ——. (Blattariæ.)

Locality: Sicilian amber. Horizon: ——.
1838. Guérin. Rev. zool., 1838: 170.

2349. Blatta ——. (Blattariæ.)

Locality: Oeningen, Baden. Horizon: Tortonian.

1834. Keferstein. Naturg. erdkörp., ii: 331.

2350. Blatta ——. (Blattariæ.)

Locality: Prussian amber. Horizon: Ligurian.

1856. Menge. Progr. petrischule Danzig, 1856: 12–13.

2351. Blatta ——. (Blattariæ.)

Locality: Prussian amber. Horizon: Ligurian.

1820. Schlotheim. Petrefactenk., 43.

2352. Blatta baltica. (Blattariæ.)

Compared with B. lapponica.

Locality: Prussian amber. Horizon: Ligurian.

1836. Berendt. Ann. soc. ent. Fr., v: 543–546 (unnamed). *Pl.* 16, *figs.* 4, 5, 7.
1856. Germ.-Ber. Berendt, Bernst. befindl. organ. reste vorw., ii, i: 32, 34 (=Blattina succinea Germ. ?). *Pl.* 4, *fig.* 5.
1864. Heer. Viert. naturf. gesellsch. Zürich, ix: 291.
1877. Goldenberg. Fauna saræp. foss., ii: 21.
See also Blattina succinea, Blatta succinea.

2353. Blatta berendti. (Blattariæ.)

Locality: Prussian amber. Horizon: Ligurian.

1856. Giebel. Insect. d. vorwelt, 322–323.

2354. Blatta colorata. (Blattariæ.)

Locality: Oeningen, Baden. Horizon: Tortonian.

1865. Heer. Urwelt der Schweiz. *Fig.* 229, on *p.* 366.
1872. " Monde prim. Suisse. *Fig.* 229, on *p.* 449.
1876. " Prim. world Switz., ii. *Fig.* 229, on *p.* 21.
1879. " Urwelt der Schweiz, 2^{e} aufl. *Fig.* 270, on *p.* 392.
See also Blattidium coloratum.

2355. Blatta didyma. (Blattariæ.)

Compared with B. lapponica.

Locality: Prussian amber. Horizon: Ligurian.

1856. Germ.-Ber. Berendt, Bernst. befindl. organ. reste vorw., ii, i: 34–35. *Pl.* 4, *fig.* 6.
1864. Heer. Viert. naturf. gesellsch. Zürich, ix: 291.
1877. Goldenberg. Fauna saræp. foss., ii: 21.
See also I, ORTHOPT., Blattina didyma.

2356. Blatta elliptica. (Blattariæ.)

Locality: Prussian amber. Horizon: Ligurian.

1862. Giebel. Zeitschr. ges. naturw., xx: 315–316.

2357. Blatta gedanensis. (Blattariæ.)

Locality: Prussian amber. Horizon: Ligurian.

1836. Berendt. Ann. soc. ent. Fr., v: 544–546. *Pl.* 16, *fig.* 6.
1856. Germ.-Ber. Berendt, Bernst. befindl. organ. reste vorw., ii, i: 33–34. *Pl.* 4, *fig.* 4.
1864. Heer. Viert. naturf. gesellsch. Zürich, ix: 291.
1877. Goldenberg. Fauna saræp. foss., ii: 21.

2358. Blatta hyperborea. (Blattariæ.)

Locality: Cap Staratschin, Spitzbergen. Horizon: Miocene.

1870. Heer. K. svensk. vet.-akad. handl., viii, No. 7: 78. *Pl.* 16, *fig.* 43*a*, *d*.

2359. Blatta pauperata. (Blattariæ.)

Locality: Rott, Rhenish Prussia. Horizon: Aquitanian.

1862. Heyden. Palaeontogr., x: 74–75. *Pl.* 10, *fig.* 22.

2360. Blatta ruficeps. (Blattariæ.)

Locality: Prussian amber. Horizon: Ligurian.

1862. Giebel. Zeitschr. ges. naturw., xx: 314–315.

2361. Blatta succinea. (Blattariæ.)

Locality: Prussian amber. Horizon: Ligurian.

1856. Giebel. Insect. d. vorwelt, 323.
See also Blattina succinea, Blatta baltica.

2362. Blatta tricuspidata. (Blattariæ.)

Locality: Prussian amber. Horizon: Ligurian.

1836. Berendt. Ann. soc. ent. Fr., v: 542–543. *Pl.* 16, *fig.* 2.
See also Polyzosteria tricuspidata.

2363. Blattidium coloratum. (Blattariæ.)

Locality: Oeningen, Baden. Horizon: Tortonian.

1864. Heer. Viert. naturf. gesellsch. Zürich, ix: 291, 301–302. *Pl.*, *fig.* 9.
1877. Goldenberg. Fauna saræp. foss., ii: 21.
See also Blatta colorata.

2364. Blattidium fragile. (Blattariæ.)

Locality: Atanekerdluk, N. Greenland. Horizon: Miocene.

1868. Heer. Flora foss. arct., i: 130. *Pl.* 50, *figs.* 13, 13*b*.
1883. " Flora foss. grönl., ii: 146.

2365. Blattina succinea. (Blattariæ.)

Compared with Blatta nivea.

Locality: Prussian amber. Horizon: Ligurian.

1813. Germar. Germ., Mag. ent., i: 16.
1864. Heer. Viert. naturf. gesellsch. Zürich, ix: 291 (=Blatta baltica?).
1888. Schlechtend. Zeitschr. ges. naturw., lxi: 487–489.
See also Blatta succinea, Blatta baltica.

2366. Chæteessa brevialata. (Mantides.)

Locality: Prussian amber. Horizon: Ligurian.

1862. Giebel. Zeitschr. ges. naturw., xx: 316–317 (Chætoessa).

Chætoessa brevialata. See Chæteessa brevialata.

2367. Chimarocephala (vic.) ———. (Acridii.)

Locality: Aix, France. Horizon: Ligurian.

1885. Scudder. Zittel, Handb. palaeont., i, th. ii: 769.
1886. " Zittel-Barrois, Traité de paléont., ii: 769.
1886. " Bull. U. S. geol. surv., No. 31: 49.
1890. " Tert. ins. N. A., 224.

2368. Chimarocephala fischeri. (Acridii.)

Locality: Oeningen, Baden. **Horizon:** Tortonian.

1890. Scudder. Tert. ins. N. A., 224.
See also Œdipoda fischeri.

2369. Cymatomera ——. (Locustariæ.)

Locality: Florissant, Colo. **Horizon:** Oligocene.

1885. Scudder. Zittel, Handb. palaeont., i, th. ii: 770.
1886. " Zittel-Barrois, Traité de paléont., ii: 770.
1886. " Bull. U. S. geol. surv., No. 31: 50.
See also Cymatomera maculata.

2370. Cymatomera maculata. (Locustariæ.)

Locality: Florissant, Colo. **Horizon:** Oligocene.

1890. Scudder. Tert. ins. N. A., 230–231. *Pl.* 17, *fig.* 7.
See also Cymatomera ——.

2371. Cyrtoxiphus macrocercus. (Gryllides.)

Locality: Aix, France. **Horizon:** Ligurian.

1890. Scudder. Tert. ins. N. A., 234 (note).
See also Gryllus macrocercus.

2372. Decticus exstinctus. (Locustariæ.)

Locality: Bonn, Germany. **Horizon:** Aquitanian.

1856. Giebel. Insect. d. vorwelt, 304.
See also Locusta exstincta, etc.

2373. Decticus speciosus. (Locustariæ.)

Compared with D. albifrons F.

Locality: Oeningen, Baden. **Horizon:** Tortonian.

1865. Heer. Urwelt der Schweiz, 366. *Fig.* 222.
1872. " Monde prim. Suisse, 449. *Fig.* 222.
1876. " Prim. world Switz., ii: 20. *Fig.* 222 on *p.* 21.
1879. " Urwelt der Schweiz, 2^{e} aufl., 391. *Fig.* 263 on *p.* 392.
Compare II, ORTHOPTERA, Decticus speciosus.

2374. Decticus umbraceus. (Locustariæ.)

Locality: Freudenheim, Bohemia. **Horizon:** ——

1869. Frič. Arch. naturw. landesdurchf. Böhm., i, th. ii: 276. *Fig.* 55.

2375. Dissosteira haidingeri. (Acridii.)

Locality: Radoboj, Croatia. **Horizon:** Mayencian.

1890. Scudder. Tert. ins. N. A., 224.
See also Œdipoda haidingeri.

2376. Forficula ——. (Forficulariæ.)

Locality: Prussian amber. **Horizon:** Ligurian.

1835. Gravenhorst. Uebers. schles. gesellsch. vaterl. cult., 1834: 93.

2377. Forficula ——. (Forficulariæ.)

Locality: Prussian amber. **Horizon:** Ligurian.

1834. Keferstein. Naturg. erdkörp., ii: 331 (as of Burmeister, but erroneously, Burmeister mentioning a cricket of the size of Forficula minor).

2378. Forficula ——. (Forficulariæ.)

Compared with F. auricularia.

Locality: Prussian amber. Horizon: Ligurian.

1856.	Menge.	Progr. petrischule Danzig, 1856: 12.

2379. Forficula ——. (Forficulariæ.)

Compared with F. auricularia et parallela, Europe.

Locality: Aix, France. Horizon: Ligurian.

1829.	Serres.	Géogn. terr. tert., 225.

2380. Forficula bolcensis. (Forficulariæ.)

Locality: Monte Bolca, Italy. Horizon: Ligurian.

1855.	Massalongo.	Nereid. foss., 31 (undescr.).
1856.	"	Studii paleont., 15–17. *Pl.* 1, *figs.* 5–7.
1876.	Scudder.	Bull. U. S. geol. surv. terr., ii: 449.
1886.	Omboni.	Atti r. ist. ven., (6), iv: 1425. *Pl.* 2, *fig.* 5.
1886.	"	Ins. foss. ven., 5. *Pl.* 2, *fig.* 5.
1890.	Scudder.	Tert. ins. N. A., 203.

2381. Forficula minuta. (Forficulariæ.)

Compared with F. minor L.

Locality: Oeningen, Baden. Horizon: Tortonian.

1865.	Heer.	Urwelt der Schweiz, 367.
1872.	"	Monde prim. Suisse, 450.
1876.	"	Prim. world Switz., ii: 22.
1879.	"	Urwelt der Schweiz, 2e aufl., 392.

2382. Forficula primigenia. (Forficulariæ.)

Locality: Oeningen, Baden. Horizon: Tortonian.

1865.	Heer.	Urwelt der Schweiz, 367. *Fig.* 227 on *p.* 366.
1872.	"	Monde prim. Suisse, 450. *Fig.* 228 on *p.* 449.
1876.	"	Prim. world Switz., ii: 21. *Fig.* 227.
1876.	Scudder.	Bull. U. S. geol. surv. terr., ii: 448–449.
1879.	Heer.	Urwelt der Schweiz, 2e aufl., 392. *Fig.* 268.
1890.	Scudder.	Tert. ins. N. A., 202.

2383. Forficula recta. (Forficulariæ.)

Compared with F. annulipes Luc.

Locality: Oeningen, Baden. Horizon: Tortonian.

1865.	Heer.	Urwelt der Schweiz, 367. *Fig.* 226 on *p.* 366.
1872.	"	Monde prim. Suisse, 450. *Fig.* 226 on *p.* 449.
1876.	"	Prim. world Switz., ii: 21. *Fig.* 226.
1876.	Scudder.	Bull. U. S. geol. surv. terr., ii: 448–449.
1879.	Heer.	Urwelt der Schweiz, 2e aufl., 392. *Fig.* 267.
1890.	Scudder.	Tert. ins. N. A., 202.

2384. Gomphocerus ——. (Acridii.)

Locality: Aix, France. Horizon: Ligurian.

18—.	Heer.	MSS.

See also Leptysma ——.

2385. **Gomphocerus abstrusus.** (Acridii.)

Locality: Florissant, Colo. **Horizon:** Oligocene.

1890.	Scudder.	Tert. ins. N. A., 223. *Pl.* 17, *fig.* 6.

2386. **Gomphocerus femoralis.** (Acridii.)

Locality: Oeningen, Baden. **Horizon:** Tortonian.

1849.	Heer.	Insektenf. tertiärg. Oeningen, ii: 20–21. *Pl.* 1, *fig.* 7.
1852.	Giebel.	Deutschl. petref., 638.
1854.	Pictet.	Traité de paléont., 2e ed., ii: 365. *Pl.* 40, *fig.* 16.
1856.	Giebel.	Insect. d. vorwelt, 309.
1885.	Scudder.	Zittel, Handb. palaeont., i. th. ii: 768.
1886.	"	Zittel-Barrois, Traité de paléont., ii: 768.
1886.	"	Bull. U. S. geol. surv., No. 31: 49.

Grillus barthelemyi. See Acridium (Gryllus) barthelemyi.

2387. **Gryllacris** ——. (Locustariæ.)

Locality: Gabbro, Italy. **Horizon:** Tripoli earth.

1878.	Capellini.	Atti accad. linc., (3), Mem. sc. fis., ii: 285.

2388. **Gryllacris** ——. (Locustariæ.)

Locality: Florissant, Colo. **Horizon:** Oligocene.

1885.	Scudder.	Zittel, Handb. palaeont., i, th. ii: 770.
1886.	"	Zittel-Barrois, Traité de paléont, ii: 770.
1886.	"	Bull. U. S. geol. surv., No. 31: 50.

2389. **Gryllacris charpentieri.** (Locustariæ.)

Locality: Radoboj, Croatia. **Horizon:** Mayencian.

1849.	Heer.	Insektenf. tertiärg. Oeningen, ii: 12–15. *Pl.* 1, *fig.* 5.
1852.	Giebel.	Deutschl. petref., 637.
1856.	"	Insect. d. vorwelt, 305–306.

See also Myrmeleon brevipenne.

2390. **Gryllacris cineris.** (Locustariæ.)

Locality: Florissant, Colo. **Horizon:** Oligocene.

1890.	Scudder.	Tert. ins. N. A., 233–234. *Pl.* 17, *fig.* 17.

2391. **Gryllacris ungeri.** (Locustariæ.)

Locality: Radoboj, Croatia. **Horizon:** Mayencian.

1849.	Heer.	Insektenf. tertiärg. Oeningen, ii: 8–12. *Pl.* 1, *fig.* 4.
1852.	Giebel.	Deutschl. petref., 637.
1856.	"	Insect. d. vorwelt, 305.
1874.	Swinton.	Geol. mag., (2), i: 338–339. *Pl.* 14, *fig.* 2.
1874.	"	Foss. Orthoptera, 2–3. *Fig.* 5.

See also Acridium —— Unger.

2392. **Gryllotalpa** ——. (Gryllides.)

Compared with G. vulgaris.

Locality: Aix, France. **Horizon:** Ligurian.

1829.	Serres.	Géogn. terr. tert., 225.

2393. Gryllotalpa ——. (Gryllides.)

Locality: **Gurnet Bay, Isle of Wight.** **Horizon:** **Bembridge Limestone.**

1879. Woodward. Quart. journ. geol. soc. Lond., xxxv: 344.
1879. " Geol. mag. (n. s.), v: 88.

2394. Gryllotalpa stricta. (Gryllides.)

Locality: Oeningen, Baden. **Horizon:** Tortonian.

1865. Heer. Urwelt der Schweiz, 367.
1872. " Monde prim. Suisse, 450.
1876. " Prim. world Switz., ii: 20.
1879. " Urwelt der Schweiz, 2^e aufl., 391.

2395. Gryllus ——. (Gryllides.)

Locality: Prussian amber. **Horizon:** Ligurian.

1841. Ehrenberg. Froriep, Neue notizen, xix: 120.

2396. Gryllus ——. (Gryllides.)

Locality: Prussian amber. **Horizon:** Ligurian.

1835. Gravenhorst. Uebers. schles. gesellsch. vaterl. cult., 1834: 93.

2397. Gryllus ——. (Acridii.)

Locality: Prussian amber. Horizon: Ligurian.

1742. Sendel. Hist. succ., 104 (unnamed). *Pl.* 3, *fig.* 16*ab*.
1825. Guérin. Dict. class. d'hist. nat., viii: 580 (criquet).
1829. Serres. Géogn. terr. tert., 241.

2398. Gryllus ——. (Acridii.)

Compared with G. cœrulescens.

Locality: Aix, France. Horizon: Ligurian.

1829. Serres. Géogn. terr. tert., 226.
See also Œdipoda ——.

Gryllus barthelemyi. See Acridium (Gryllus) barthelemyi.

2399. Gryllus domesticus (recent). (Gryllides.)

Locality: Prussian amber. Horizon: Ligurian.

[1758. Linné. Syst. nat. ed. x, i: 428.]
1784. Meinecke. Naturforscher, xx: 187.

2400. Gryllus macrocercus. (Gryllides.)

Locality: Prussian amber. Horizon: Ligurian.

1856. Germ.-Ber. Berendt, Bernst. befindl. organ. reste vorw., ii, i: 36. *Pl.* 4, *figs.* 8, 8*a–c*.
1885. Scudder. Zittel, Handb. palaeont., i, th. ii: 770 (macrocerus) (probably a trigonid.) *Fig.* 970.
1886. " Zittel-Barrois, Traité de paléont., ii: 770 (probably a trigonid). *Fig.* 987.
1886. " Bull. U. S. geol. surv., No. 31: 50.
See also Cyrtoxiphus macrocercus.

Gryllus macrocerus. See Gryllus macrocercus.

2401. Gryllus troglodytes. (Gryllides.)

Locality: Oeningen, Baden. Horizon: Tortonian.

1865.	Heer.	Urwelt der Schweiz, 367. *Fig.* 225 on *p.* 366.
1872.	“	Monde prim. Suisse, 450. *Fig.* 225 on *p* 449.
1876.	“	Prim. world Switz., ii: 21. *Fig.* 225.
1879.	“	Urwelt der Schweiz, 2ᵉ aufl., 391–392. *Fig.* 266.
1885.	Scudder.	Zittel, Handb. palaeont., i, th. ii: 770 (probably a Nemobius).
1886.	“	Zittel-Barrois, Traité de paléont., ii: 770 (probably a Nemobius).
1886.	“	Bull. U. S. geol. surv., No. 31: 50.

See also Nemobius troglodytes.

2402. Heterogamia antiqua. (Blattariæ.)

Locality: Parschlug, Styria. Horizon: Tortonian.

1849.	Heer.	Insektenf. tertiärg. Oeningen, ii: 1–3. *Pl.* 1, *fig.* 1.
1852.	Giebel.	Deutschl. petref., 637.
1856.	“	Insect. d. vorwelt, 313.
1864.	Heer.	Viert. naturf. gesellsch. Zürich, ix: 291.
1877.	Goldenberg.	Fauna saræp. foss., ii: 21.

2403. Hippiscus melanostictus. (Acridii.)

Locality: Radoboj, Croatia. Horizon: Mayencian.

1890.	Scudder.	Tert. ins. N. A., 224.

See also Œdipoda melanosticta.

2404. Homœogamia ventriosus. (Blattariæ.)

Locality: Florissant, Colo. Horizon: Oligocene.

1876.	Scudder.	Bull. U. S geol. surv. terr., i: 447.
1890.	“	Tert. ins. N. A., 218. *Pl.* 17, *fig.* 8.

2405. Labidura lithophila. (Forficulariæ)

Locality: Florissant, Colo. Horizon: Oligocene.

1876.	Scudder.	Bull. U. S geol. surv. terr., ii: 259–260.

See also Labiduromma lithophilum.

2406. Labidura tertiaria. (Forficulariæ.)

Locality: Florissant, Colo. Horizon: Oligocene.

1876.	Scudder.	Bull. U. S. geol. surv. terr., i: 447–449.
1876.	“	Bull. U. S. geol. surv. terr., ii: 259.

See also Labiduromma tertiarium.

2407. Labiduromma ———. (Forficulariæ.)

Locality: Florissant, Colo. Horizon: Oligocene.

1890.	Scudder.	Tert. ins. N. A., 214. *Pl.* 16, *fig.* 24.

2408. Labiduromma avia. (Forficulariæ.)

Locality: Florissant, Colo. Horizon: Oligocene.

1890.	Scudder.	Tert. ins. N. A., 205–206. *Pl.* 16, *figs.* 3, 5, 11, 22, 23.

2409. Labiduromma bormansi. (Forficulariæ.)

Locality: Florissant, Colo. Horizon: Oligocene.

1890.	Scudder.	Tert. ins. N. A., 206–207. *Pl.* 16, *fig.* 1.

2393. Gryllotalpa ———. (Gryllides.)

Locality: Gurnet Bay, Isle of Wight. Horizon: Bembridge Limestone.

1879.	**Woodward.**	Quart. journ. geol. soc. Lond., xxxv: 344.
1879.	"	Geol. mag. (n. s.), v: 88.

2394. Gryllotalpa stricta. (Gryllides.)

Locality: Oeningen, Baden. Horizon: Tortonian.

1865.	**Heer.**	Urwelt der Schweiz, 367.
1872.	"	Monde prim. Suisse, 450.
1876.	"	Prim. world Switz., ii: 20.
1879.	"	Urwelt der Schweiz, 2^e aufl., 391.

2395. Gryllus ———. (Gryllides.)

Locality: Prussian amber. Horizon: Ligurian.

1841.	**Ehrenberg.**	Froriep, Neue notizen, xix: 120.

2396. Gryllus ———. (Gryllides.)

Locality: Prussian amber. Horizon: Ligurian.

1835.	**Gravenhorst.**	Uebers. schles. gesellsch. vaterl. cult., 1834: 93.

2397. Gryllus ———. (Acridii.)

Locality: Prussian amber. Horizon: Ligurian.

1742.	Sendel.	Hist. succ., 104 (unnamed). *Pl.* 3, *fig.* 16*ab*.
1825.	Guérin.	Dict. class. d'hist. nat., viii: 580 (criquet).
1829.	Serres.	Géogn. terr. tert., 241.

2398. Gryllus ———. (Acridii.)

Compared with G. cœrulescens.

Locality: Aix, France. Horizon: Ligurian.

1829.	**Serres.**	Géogn. terr. tert., 226.

See also Œdipoda ———.

Gryllus barthelemyi. See Acridium (Gryllus) barthelemyi.

2399. Gryllus domesticus (recent). (Gryllides.)

Locality: Prussian amber. Horizon: Ligurian.

[1758.	Linné.	Syst. nat. ed. x, i: 428.]
1784.	Meinecke.	Naturforscher, xx: 187.

2400. Gryllus macrocercus. (Gryllides.)

Locality: Prussian amber. Horizon: Ligurian.

1856.	Germ.-Ber.	Berendt, Bernst. befindl. organ. reste vorw., ii, i: 36. *Pl.* 4, *figs.* 8, 8*a–c*.
1885.	Scudder.	Zittel, Handb. palaeont., i, th. ii: 770 (macrocerus) (probably a trigonid.) *Fig.* 970.
1886.	"	Zittel-Barrois, Traité de paléont., ii: 770 (probably a trigonid). *Fig.* 987.
1886.	"	Bull. U. S. geol. surv., No. 31: 50.

See also Cyrtoxiphus macrocercus.

Gryllus macrocerus. See Gryllus macrocercus.

2401. Gryllus troglodytes. (Gryllides.)

Locality: Oeningen, Baden. Horizon: Tortonian.

1865.	Heer.	Urwelt der Schweiz, 367. *Fig.* 225 on *p.* 366.
1872.	"	Monde prim. Suisse, 450. *Fig.* 225 on *p* 449.
1876.	"	Prim. world Switz., ii: 21. *Fig.* 225.
1879.	"	Urwelt der Schweiz, 2e aufl., 391–392. *Fig.* 266.
1885.	Scudder.	Zittel, Handb. palaeont., i, th. ii: 770 (probably a Nemobius).
1886.	"	Zittel-Barrois, Traité de paléont., ii: 770 (probably a Nemobius).
1886.	"	Bull. U. S. geol. surv., No. 31: 50.

See also Nemobius troglodytes.

2402. Heterogamia antiqua. (Blattariæ.)

Locality: Parschlug, Styria. Horizon: Tortonian.

1849.	Heer.	Insektenf. tertiärg. Oeningen, ii: 1–3. *Pl.* 1, *fig.* 1.
1852.	Giebel.	Deutschl. petref., 637.
1856.	"	Insect. d. vorwelt, 313.
1864.	Heer.	Viert. naturf. gesellsch. Zürich, ix: 291.
1877.	Goldenberg.	Fauna saræp. foss., ii: 21.

2403. Hippiscus melanostictus. (Acridii.)

Locality: Radoboj, Croatia. Horizon: Mayencian.

1890.	Scudder.	Tert. ins. N. A., 224.

See also Œdipoda melanosticta.

2404. Homœogamia ventriosus. (Blattariæ.)

Locality: Florissant, Colo. Horizon: Oligocene.

1876.	Scudder.	Bull. U. S geol. surv. terr., i: 447.
1890.	"	Tert. ins. N. A., 218. *Pl.* 17, *fig.* 8.

2405. Labidura lithophila. (Forficulariæ.)

Locality: Florissant, Colo. Horizon: Oligocene.

1876.	Scudder.	Bull. U. S geol. surv. terr., ii: 259–260.

See also Labiduromma lithophilum.

2406. Labidura tertiaria. (Forficulariæ.)

Locality: Florissant, Colo. Horizon: Oligocene.

1876.	Scudder.	Bull. U. S. geol. surv. terr., i: 447–449.
1876.	"	Bull. U. S. geol. surv. terr., ii: 259.

See also Labiduromma tertiarium.

2407. Labiduromma ——. (Forficulariæ.)

Locality: Florissant, Colo. Horizon: Oligocene.

1890.	Scudder.	Tert. ins. N. A., 214. *Pl.* 16, *fig.* 24.

2408. Labiduromma avia. (Forficulariæ.)

Locality: Florissant, Colo. Horizon: Oligocene.

1890.	Scudder.	Tert. ins. N. A., 205–206. *Pl.* 16, *figs.* 3, 5, 11, 22, 23.

2409. Labiduromma bormansi. (Forficulariæ.)

Locality: Florissant, Colo. Horizon: Oligocene.

1890.	Scudder.	Tert. ins. N. A., 206–207. *Pl.* 16, *fig.* 1.

2410. Labiduromma commixtum. (Forficulariæ.)

Locality: Florissant, Colo. Horizon: Oligocene.

1890.	Scudder.	Tert. ins. N. A., 208–209. *Pl.* 16, *figs.* 10, 17.

2411. Labiduromma exsulatum. (Forficulariæ.)

Locality: Florissant, Colo. Horizon: Oligocene.

1885.	Scudder.	Zittel, Handb. palaeont., i, th. ii: 766. *Fig.* 959.
1886.	"	Zittel-Barrois, Traité de paléont., ii: 766. *Fig.* 975
1890.	"	Tert. ins. N. A., 212–213. *Pl.* 16, *fig.* 12.

2412. Labiduromma gilberti. (Forficulariæ.)

Locality: Florissant, Colo. Horizon: Oligocene.

1890.	Scudder.	Tert. ins. N. A., 211. *Pl.* 16, *fig.* 14.

2413. Labiduromma infernum. (Forficulariæ.)

Locality: Florissant, Colo. Horizon: Oligocene.

1890.	Scudder.	Tert. ins. N. A., 214. *Pl.* 16, *fig.* 7.

2414. Labiduromma labens. (Forficulariæ.)

Locality: Florissant, Colo. Horizon: Oligocene.

1890.	Scudder.	Tert. ins. N. A., 214–215. *Pl.* 16, *figs.* 9, 13, 16.

2415. Labiduromma lithophilum. (Forficulariæ.)

Locality: Florissant, Colo. Horizon: Oligocene.

1890.	Scudder.	Tert. ins. N. A., 213. *Pl.* 16, *fig.* 19.

See also Labidura lithophila.

2416. Labiduromma mortale. (Forficulariæ.)

Locality: Florissant, Colo. Horizon: Oligocene.

1890.	Scudder.	Tert. ins. N. A., 207–208. *Pl.* 16, *figs.* 2, 6, 20.

2417. Labiduromma tertiarium. (Forficulariæ.)

Locality: Florissant, Colo. Horizon: Oligocene.

1890.	Scudder.	Tert. ins. N. A., 209–211. *Pl.* 16, *figs.* 15, 18, 21.

See also Labidura tertiaria.

2418. Leptysma (or Arnilia) ———. (Acridii.)

Locality: Aix, France. Horizon: Ligurian.

1890.	Scudder.	Tert. ins. N. A., 223.

See also Gomphocerus ———.

2419. Lithymnetes guttatus. (Locustariæ.)

Locality: Florissant, Colo. Horizon: Oligocene.

1878.	Scudder.	Bull. U. S. geol. surv. terr., iv: 533–534.
1885.	"	Zittel, Handb. palaeont., i, th. ii: 769. *Fig.* 969.
1886.	"	Zittel-Barrois, Traité de paléont., ii: 769. *Fig.* 986.
1889.	Lesley.	Dict. foss. Penns., i: 354. *Fig.*
1890.	Scudder.	Tert. ins. N. A., 229–230. *Pl.* 17, *figs.* 14, 15.

2420. Locusta ———. (Locustariæ.)

Locality: Rhine, Germany. Horizon: Braunkohl.

1831.	Goldfuss.	Verhandl. leop.-carol. akad. naturf., vii, th. i: 118.

2421. **Locusta** ——. (Locustariæ.)

Locality: Prussian amber. Horizon: Ligurian.

1834.	Keferstein.	Naturg. erdkörp., ii: 332 (as of Burmeister, but erroneously).

2422. **Locusta** ——. (Locustariæ.)

Locality: Florissant, Colo. Horizon: Oligocene.

1885.	Scudder.	Zittel, Handb. palaeont., i, th. ii: 770.
1886.	"	Zittel-Barrois, Traité de paléont., ii: 770.
1886.	"	Bull. U. S. geol. surv., No. 31: 50.

2423. **Locusta** ——. (Locustariæ.)

Compared with L. grisea.

Locality: Aix, France. Horizon: Ligurian.

1829.	Serres.	Géogn. terr. tert., 226.
1890.	Scudder.	Tert. ins. N. A., 232.

2424. **Locusta exstincta.** (Locustariæ.)

Compared with L. grisea.

Locality: Rhenish Prussia. Horizon: Aquitanian.

1837.	Germar.	Fauna insect. Europæ, xix: 16. *Pl.* 16.
1886.	Scudder.	Bull. U. S. geol. surv., No. 31: 50.

See also Decticus exstinctus, Locustites exstinctus.

2425. **Locusta grönlandica.** (Locustariæ.)

Locality: Ober Atanekerdluk, Greenland. Horizon: ——.

1883.	Heer.	Flora foss. grönl., ii: (Grönl. geol. unders.) 146–147. *Pl.* 109, *figs.* 12, 12*b*.
1885.	Scudder.	Zittel, Handb. palaeont., i, th. ii: 770.
1886.	"	Zittel-Barrois, Traité de paléont., ii: 770.
1886.	"	Bull. U. S. geol. surv., No. 31: 50.
1890.	"	Tert. ins. N. A., 232.

2426. **Locusta silens.** (Locustariæ.)

Compared with L. occidentalis, United States.

Locality: Florissant, Colo. Horizon: Oligocene.

1890.	Scudder.	Tert. ins. N. A., 232. *Pl.* 17, *figs.* 9, 10.

2427. **Locustites exstinctus.** (Locustariæ.)

Locality: Bonn, Rhenish Prussia. Horizon: Aquitanian.

1852.	Giebel.	Deutschl. petref., 637.

See also Locusta exstincta, etc.

2428. **Locustites maculatus.** (Locustariæ.)

Locality: Parschlug, Styria. Horizon: Tortonian.

1849.	Heer.	Insektenf. tertiärg. Oeningen, ii: 5–8. *Pl.* 1, *fig.* 3.
1852.	Giebel.	Deutschl. petref., 637.
1856.	"	Insect. d. vorwelt, 303.

2429. **Mantis** ——. (Mantides.)

Locality: Prussian amber. Horizon: Ligurian.

1825.	Guérin.	Dict. class. d'hist. nat., viii: 580 (Mante).
1829.	Serres.	Géogn. terr. tert., 211.

2430. Mantis protogæa. (Mantides.)

Locality: Oeningen, Baden. Horizon: Tortonian.

1849. Heer. Insektenf. tertiärg. Oeningen, ii: 21–22. *Pl.* 1, *fig.* 8.
1852. Giebel. Deutschl. petref., 638.
1856. " Insect. d. vorwelt, 311.
1885. Scudder. Zittel, Handb. palaeont., i, th. ii: 767.
1886. " Zittel-Barrois, Traité de paléont., ii: 767.
1886. " Bull. U. S. geol. surv., No. 31: 49.

2431. Myrmeleon brevipenne. (Locustariæ.)

Locality: Radoboj, Croatia. Horizon: Mayencian.

1843. Charpentier. Verhandl. leop.-carol. akad. naturf., xx: 406–407. *Pl.* 22, *fig.* 1.
1866. Hagen. Stett. ent. zeit., xxvii: 436 (an orthopteron ?).
See also Gryllacris charpentieri.

2432. Nanthacia torpida. (Acridii.)

Locality: Florissant, Colo. Horizon: Oligocene.

1890. Scudder. Tert. ins. N. A., 224–225.

2433. Nemobius ——— (2 sp.). (Gryllides.)

Locality: Aix, France. Horizon: Ligurian.

1890. Scudder. Tert. ins. N. A., 234 (undescr.).

2434. Nemobius tertiarius. (Gryllides.)

Compared with N. vittatus (Harr.).

Locality: Green River, Wyo. Horizon: Oligocene.

1878. Scudder. Bull. U. S. geol. surv. terr., iv: 774.
See also Pronemobius tertiarius.

2435. Nemobius troglodytes. (Gryllides.)

Locality: Oeningen, Baden. Horizon: Tortonian.

1890. Scudder. Tert. ins. N. A., 234.
See also Gryllus troglodytes

2436. Œdipoda ———. (Acridii.)

Locality: Aix, France. Horizon: Ligurian.

1890. Scudder. Tert. ins. N. A., 225.
See also Gryllus ——— Serres.

2437. Œdipoda fischeri. (Acridii.)

Locality: Oeningen, Baden. Horizon: Tortonian.

1865. Heer. Urwelt der Schweiz, 367. *Fig.* 224, on *p.* 366.
1872. " Monde prim. Suisse, 450. *Fig.* 224, on *p.* 449.
1876. " Prim. world Switz., ii: 20. *Fig.* 224, on *p.* 21.
1879. " Urwelt der Schweiz, 2e aufl., 391. *Fig.* 265, on *p.* 392.
See also Chimarocephala fischeri.

2438. Œdipoda germari. (Acridii.)

Compared with Œ. migratoria.

Locality: Oeningen, Baden. Horizon: Tortonian.

1865. Heer. Urwelt der Schweiz, 367.
1872. " Monde prim. Suisse, 450.
1876. " Prim. world Switz., ii: 20.
1879. " Urwelt der Schweiz, 2e aufl., 391.

2439. Œdipoda haidingeri. (Acridii.)

Locality: Radoboj, Croatia. Horizon: Mayencian.

1865.	**Heer.**	**Urwelt der Schweiz, 367.** ***Fig.*** **223, on *p.* 366.**
1872.	**"**	**Monde prim. Suisse, 450.** ***Fig.*** **223, on *p.* 449.**
1876.	**"**	**Prim. world Switz., ii: 20.** ***Fig.*** **223, on *p.* 21.**
1879.	**"**	**Urwelt der Schweiz, 2^e aufl., 391.** ***Fig.*** **264, on *p.* 392.**

See also Dissosteira haidingeri.

2440. Œdipoda melanosticta. (Acridii.)

Locality: Radoboj, Croatia. Horizon: Mayencian.

1840.	**Unger.**	**Chloris protogæa, i (unnamed).** ***Pl.*** **5.**
1843.	**Charpentier.**	**Verhandl. leop.-carol. akad. naturf., xx: 405–406.** ***Pl.*** **21, *figs.* 1–5.**
1846.	**Geinitz.**	**Grundr. versteinerungsk., 189.** ***Pl.*** **8, *figs.* 6–7.**
1849.	**Heer.**	**Insektenf. tertiärg. Oeningen, ii: 15–18.** ***Pl.*** **2, *fig.* 1.**
1852.	**Giebel.**	**Deutschl. petref., 637.**
1856.	**"**	**Insect. d. vorwelt, 308.**

See also Hippiscus melanostictus.

2441. Œdipoda nigro-fasciolata. (Acridii.)

Locality: Radoboj, Croatia. Horizon: Mayencian.

1849.	**Heer.**	**Insektenf. tertiärg. Oeningen, ii: 18–20.** ***Pl.*** **2, *fig.* 2.**
1852.	**Giebel.**	**Deutschl. petref., 637.**
1856.	**"**	**Insect. d. vorwelt, 308.**
1885.	**Scudder.**	**Zittel, Handb. palaeont., i, th. ii: 768.**
1886.	**"**	**Zittel-Barrois, Traité de paléont., ii: 768.**
1886.	**"**	**Bull. U. S. geol. surv., No. 31: 49.**

See also Scyllina nigrofasciolata.

2442. Œdiopda œningensis. (Acridii.)

Locality: Oeningen, Baden. Horizon: Tortonian.

"1755.	**Knorr.**	**Merkwürd. d. nat., (unnamed).** ***Pl.*** **33, *fig.* 5." Heer.**
1849.	**Heer.**	**Insektenf. tertiärg. Oeningen, ii: 20.** ***Pl.*** **2, *fig.* 4.**
1852.	**Giebel.**	**Deutschl. petref., 637.**
1856.	**"**	**Insect. d. vorwelt, 309.**
1890.	**Scudder.**	**Tert. ins. N. A., 225.**

2443. Œdipoda præfocata. (Acridii.)

Locality: Florissant, Colo. Horizon: Oligocene.

1890.	**Scudder.**	**Tert. ins. N. A., 225.** ***Pl.*** **17, *fig.* 5.**

2444. Orchelimum ———. (Locustariæ.)

Locality: Florissant, Colo. Horizon: Oligocene.

1885.	**Scudder.**	**Zittel, Handb. palaeont., i, th. ii: 770.**
1886.	**"**	**Zittel-Barrois, Traité de paléont., ii: 770.**
1886.	**"**	**Bull. U. S. geol. surv., No. 31: 50.**

See also Orchelimum placidum.

2445. Orchelimum placidum. (Locustariæ.)

Locality: Florissant, Colo. Horizon: Oligocene.

1890.	**Scudder.**	**Tert. ins. N. A., 231-232.** ***Pl.*** **17, *figs.* 16, 18, 19.**

See also Orchelimum ———.

Pachytilus ———. See **Pachytylus ———.**

2446. Pachytylus ———. (Acridii.)

Locality: Oeningen, Baden. **Horizon**: Tortonian.

1888. **Schöberlin.** Soc. ent., iii: 51 (Pachytilus).

2447. Paralatindia ———. (Blattariæ.)

Locality: Green River, Wyo. **Horizon**: Oligocene.

1885. **Scudder.** Zittel, Handb. palaeont., i, th. ii: 767.
1886. " Zittel-Barrois, Traité de paléont., ii: 767.
1886. " Bull. U. S. geol. surv., No. 31: 48.
See also Paralatindia saussurei.

2448. Paralatindia saussurei. (Blattariæ.)

Locality: Green River, Wyo. **Horizon**: Oligocene.

1890. **Scudder.** Tert. ins. N. A., 216. *Pl.* 6, *fig.* 25.
See also Paralatindia ———.

2449. Phaneroptera vetusta. (Locustariæ.)

Locality: Oeningen, Baden. **Horizon**: Tortonian.

1849. Heer. Insektenf. tertiärg. Oeningen, ii: 3–5. *Pl.* 1, *fig.* 2.
1852. Giebel. Deutschl. petref., 637.
1856. " Insect. d. vorwelt, 302–303.
1885. Scudder. Zittel, Handb. palaeont., i, th. ii: 770.
1886. " Zittel-Barrois, Traité de paléont., ii: 770.
1886. " Bull. U. S. geol. surv., No. 31: 50.

2450. Phasma ———. (Phasmida.)

Locality: Prussian amber. **Horizon**: Ligurian.

1856. **Hagen.** Berendt, Bernst. befindl. organ. reste vorw., ii, th. i: 122. *Pl.* 4, *fig.* 11.
1856. **Menge.** Progr. petrischule Danzig, 1856: 13.

Phylloptera ———. See ——— ——— (Locustariæ) Scudder.

2451. Polyzosteria ———. (Blattariæ.)

Locality: Prussian amber. **Horizon**: Ligurian.

1856. Menge. Progr. petrischule Danzig, 1856: 12–13.

2452. Polyzosteria parvula. (Blattariæ.)

Locality: Prussian amber. **Horizon**: Ligurian.

1836. Berendt. Ann. soc. ent. Fr., v: 541–542 (unnamed). *Pl.* 16, *fig.* 1.
1856. Germ.-Ber. Berendt, Bernst. befindl. organ. reste vorw., ii, th. i: 32, 35. *Pl.* 4, *fig.* 2.
1864. Heer. Viert. naturf. gesellsch. Zürich, ix: 291.
1877. Goldenberg. Fauna saræp. foss., ii: 21.

2453. Polyzosteria tricuspidata. (Blattariæ.)

Compared with P. decipiens Burm., Europe.

Locality: Prussian amber. **Horizon**: Ligurian.

1856. **Germ.-Ber.** Berendt, Bernst. befindl. organ. reste vorw., ii, th. i: 32, 35–36. *Pl.* 4, *fig.* 1.
1864. **Heer.** Viert. naturf. gesellsch. Zürich, ix: 291.
1877. **Goldenberg.** Fauna saræp. foss., 21.
See also Blatta tricuspidata.

2454. Pronemobius induratus. (Gryllides.)

Locality: Green River, Wyo. Horizon: Oligocene.

890. Scudder. Tert. ins. N. A., 235. *Pl.* 6, *fig.* 18.

2455. Pronemobius smithii. (Gryllides.)

Locality: Green River, Wyo. Horizon: Oligocene.

890. Scudder. Tert. ins. N. A., 236–237. *Pl.* 6, *fig.* 22.

2456. Pronemobius tertiarius. (Gryllides.)

Locality: Green River, Wyo. Horizon: Oligocene.

1890. Scudder. Tert. ins. N. A., 235–236. *Pl.* 6, *figs.* 13, 21, 23.

See also Nemobius tertiarius.

2457. Pseudoperla gracilipes. (Phasmida.)

Locality: Prussian amber. Horizon: Ligurian.

1854. Hagen. Verhandl. zool.-bot. ver. Wien, iv: 228.
1854. Pictet. Traité de paléont., 2^e ed., ii: 364. *Pl.* 40, *fig.* 25.
1856. " Berendt, Bernst. befindl. organ. reste vorw., ii, th. i: 38. *Pl.* 4, *fig.* 9.
1856. Hagen. Berendt, Bernst. befindl. organ. reste vorw., ii, th. i: 39–40.

2458. Pseudoperla lineata. (Phasmida.)

Locality: Prussian amber. Horizon: Ligurian.

1854. Pictet. Traité de paléont., 2^e ed., ii: 364 (undescr.).
1856. " Berendt, Bernst. befindl. organ. reste vorw., ii, th. i: 38–39. *Pl.* 4, *fig.* 10.
1856. Hagen. Berendt, Bernst. befindl. organ. reste vorw., ii, th. i: 39–40.
1885. Scudder. Zittel, Handb. palaeont., i, th. ii: 768. *Fig.* 964.
1886. " Zittel-Barrois, Traité de paléont., ii: 768. *Fig.* 981.

2459. Scyllina ? nigrofasciolata. (Acridii.)

Locality: Radoboj, Croatia. Horizon: Mayencian.

1890. Scudder. Tert. ins. N. A., 220.

See also Œdipoda nigrofasciolata.

2460. Taphacris reliquata. (Acridii.)

Locality: Florissant, Colo. Horizon: Oligocene.

1890. Scudder. Tert. ins. N. A., 226–227. *Pl.* 12, *figs.* 8, 19.

2461. Tetrix gracilis. (Acridii.)

Locality: Oeningen, Baden. Horizon: Tortonian.

1865. Heer. Urwelt der Schweiz. *Fig.* 228 on *p.* 366.
1872. " Monde prim. Suisse. *Fig.* 228 on *p.* 449.
1876. " Prim. world Switz., ii. *Fig.* 228 on *p.* 21.
1879. " Urwelt der Schweiz, 2^e aufl. *Fig.* 269 on *p.* 392.
1885. Scudder. Zittel, Handb. palaeont., i, th. ii: 768 (Tettigidea in expl. of cut). *Fig.* 966.
1886. " Zittel-Barrois, Traité de paléont., ii: 768 (Tettigidea in expl. of cut). *Fig.* 983.
1886. " Bull. U. S. geol. surv., No. 31: 49.

See also Tettigidea gracilis.

2462. Tettigidea gracilis. (Acridii.)

Locality: Oeningen, Baden. Horizon: Tortonian.

1890. Scudder. Tert. ins. N. A., 220.
See also Tetrix gracilis.

2463. Tyrbula multispinosa. (Acridii.)

Localities: Green River, Wyo.; Florissant, Colo. Horizon: Oligocene.

1890. Scudder. Tert. ins. N. A., 221–222. *Pl.* 17, *fig.* 13.

2464. Tyrbula russelli. (Acridii.)

Locality: Florissant, Colo. Horizon: Oligocene.

1885. Scudder. Zittel, Handb. palaeont., i, th. ii: 768. *Fig.* 965.
1886. " Zittel-Barrois, Traité de paléont., ii: 768. *Fig.* 982.
1890. " Tert. ins. N. A., 222–223. *Pl.* 17, *figs.* 1–4.

2465. Xya ——. (Gryllides.)

Compared with X. variegata, Europe.

Locality: Aix, France. Horizon: Ligurian.

1829. Serres. Géogn. terr. tert., 226.

2466. Zetobora ——. (Blattariæ.)

Locality: Florissant, Colo. Horizon: Oligocene.

1885. Scudder. Zittel, Handb. palaeont., i, th. ii: 767.
1886. " Zittel-Barrois, Traité de paléont., ii: 767.
1886. " Bull. U. S. geol. surv., No. 31: 48.

2467. Zetobora brunneri. (Blattariæ.)

Locality: Florissant, Colo. Horizon: Oligocene.

1890. Scudder. Tert. ins. N. A., 217. *Pl.* 17, *fig.* 12.

NEUROPTERA.

2468. —— ——.

Locality: England. Horizon: Pleistocene.

1888. Bell. Entom., xxi: 2.

2469. —— ——.

Locality: Bournemouth, England. Horizon: Middle Eocene.

1878. Goss. Proc. ent. soc. Lond., 1878: 8.

2470. —— ——.

Locality: Sinigaglia, Italy. Horizon: Helvetian?.

1842. Procaccini. Nuov. ann. sc. nat., vii: 449.

2471. —— —— (larva).

Locality: Florissant, Colo. Horizon: Oligoçene.

1881. Scudder. Bull. U. S. geol. surv. terr., vi: 294.
See also Planocephalus aselloides.

2472. ——— ——— (several). (Ephemeridæ.)

Locality: Florissant, Colo. Horizon: Oligocene.
881. Scudder. Bull. U. S. geol. surv. terr., vi: 293.
883. " Ann. rep. U. S. geol. surv. terr., xii: 294.

2473. ——— ——— (several). (Hydropsychidæ.)

Locality: Florissant, Colo. Horizon: Oligocene.
881. Scudder. Bull. U. S. geol. surv. terr., vi: 293.

2474. ——— ——— (several). (Leptoceridæ.)

Locality: Florissant, Colo. Horizon: Oligocene.
1881. Scudder. Bull. U. S. geol. surv. terr., vi: 293

2475. ——— ——— (under wing). (Odonata.)

Locality: Eisleben, Saxony. Horizon: ———
1856. Giebel. Zeitschr. ges. naturw., vii: 386. *Pl.* 5, *fig.* 4.

2476. ——— ———. (Odonata–Libellulina).

Locality: Green River, Wyo. Horizon: Oligocene.
1878. Scudder. Bull. U. S. geol. surv. terr., iv: 775.
See also Libellula ——— Scudder.

2477. ——— **calypso.** (Odonata–Libellulina).

Locality: Oeningen, Baden. Horizon: Tortonian.
1868. Brauer. Verhandl. zool.-bot. gesellsch. Wien, xviii: 738.
1868. " Verz. bek. Neur., 86.

2478. ——— **cassandra.** (Odonata–Libellulina).

Locality: Rott, Rhenish Prussia. Horizon: Aquitanian.
1868. Brauer. Verhandl. zool.-bot. gesellsch. Wien, xviii: 738.
1868. " Verz. bek. Neur., 86.
See also Libellula cassandra.

2479. ——— **ceres.** (Odonata–Libellulina).

Locality: Rott, Rhenish Prussia. Horizon: Aquitanian.
1868. Brauer. Verhandl. zool.-bot. gesellsch. Wien, xviii: 738.
1868. " Verz. bek. Neur., 86 (= cellulosa?).
See also Libellula ceres, etc.

2480. ——— **doris.** (Odonata–Libellulina).

Locality: Oeningen, Baden. Horizon: Tortonian.
1868. Brauer. Verhandl. zool. bot.-gesellsch. Wien, xviii: 738.
1868. " Verz. bek. Neur., 86.
See also Libellula doris.

2481. ——— **eurynome.** (Odonata–Libellulina).

Locality: Oeningen, Baden. Horizon: Tortonian.
1868. Brauer. Verhandl. zool.-bot. gesellsch. Wien, xviii: 738.
1868. " Verz. bek. Neur., 86.
See also Libellula eurynome. Libellula ——— Scheuchzer.

2482. ——— **melobasis.** (Odonata-Libellulina).

Locality: Oeningen, Baden. Horizon: Tortonian.

1868. Brauer. Verhandl. zool.-bot. gesellsch. Wien, xviii: 738.
1868. " Verz. bek. Neur., 86.
See also Libellula melobasis.

2483. ——— **perse.** (Odonata-Libellulina).

Locality: Oeningen, Baden. Horizon: Tortonian.

1868. Brauer. Verhandl. zool.-bot. gesellsch. Wien, xviii: 738.
1868. " Verz. bek. Neur., 86.
See also Libellula perse.

2484. ——— **thetis.** (Odonata-Libellulina).

Locality: Oeningen, Baden. Horizon: Tortonian.

1868. Brauer. Verhandl. zool.-bot. gesellsch. Wien, xviii: 738.
1868. " Verz. bek. Neur., 86.
See also Libellula thetis.

2485. ——— **thoe.** (Odonata-Libellulina).

Locality: Oeningen, Baden. Horizon: Tortonian.

1868. Brauer. Verhandl. zool.-bot. gesellsch. Wien, xviii: 738.
1868. " Verz. bek. Neur., 86.
See also Libellula thoe.

2486. ——— ——— (several). (Perlina.)

Locality: Florissant, Colo. Horizon: Oligocene.

1881. Scudder. Bull. U. S. geol. surv. terr., vi: 293.

2487. ——— ——— (several). (Phryganidæ.)

Locality: Florissant, Colo. Horizon: Oligocene.

1881. Scudder. Bull. U. S. geol. surv. terr., vi: 293.

2488. ——— ——— (several). (Rhyacophilidæ.)

Locality: Florissant, Colo. Horizon: Oligocene.

1881. Scudder. Bull. U. S. geol. surv. terr., vi: 293.

2489. ——— ——— (7 sp.). (Termitina.)

Locality: Oeningen, Baden. Horizon: Tortonian.

1888. Schöberlin. Soc. ent., iii: 51.

2490. ——— ———. (Thysanura.)

Locality: Prussian amber. Horizon: Ligurian.

1819. Schweigger. Beobacht. naturh. reisen, 113. *Pl.* 8, *figs.* 71, 71*ab*.

2491. ——— ———. (Trichoptera.)

Locality: Prussian amber. Horizon: Ligurian.

1841. Ehrenberg. Froriep, Neue notizen, xix: 120.

2492. ——— ——— (larval tubes). (Trichoptera.)

Locality: Gard, France. Horizon: Oligocene.

1884. Marion. Saporta, Organ. probl. anc. mers, 24-26 (on leaves of Nymphæa dumasii). *Pls.* 3, 4, and *fig.* 4, on *p.* 25.

2493. Acreagris ——. (Thysanura?.)

Locality: Prussian amber. Horizon: Ligurian.

1845.	**Berendt.**	**Bernst. befindl. organ. reste vorw., i: 56.**

2494. Acreagris crenata. (Thysanura?.)

Locality: Prussian amber. Horizon: Ligurian.

1845.	**Koch-Ber.**	**Jahrb. f. mineral., 1845: 873.**
1854.	"	**Berendt, Bernst. befindl. organ. reste vorw., i, th. ii: 123. *Pl.* 17, *fig.* 157.**
1854.	**Menge.**	**Ibid., i, th. ii: 123 (=Monophlebus ♀).**
1856.	**Giebel.**	**Insect. d. vorwelt, 331.**

See also III, HEMIPTERA, Monophlebus ——.

2495. Æschna ——. (Odonata.)

Compared with Æschna grandis.

Locality: Oeningen, Baden. Horizon: Tortonian.

1832.	**Curtis.**	**Murch., Trans. geol. soc. Lond., (2), iii: 286 (Œschna). *Pl.* 34, *figs.* 4–5.**

2496. Æschna ——. (Odonata.)

Locality: Bournemouth, England. Horizon: Middle Eocene, Bagshot Sands.

1878.	**Goss.**	**Entom., xi: 193–195. *Fig.***
1878.	"	**Proc. ent. soc. Lond., 1887: 8.**

See also Basiæschna ——.

2497. Æschna —— (tip of wing). (Odonata.)

Locality: Prussian amber. Horizon: Ligurian.

1854.	**Hagen.**	**Verhandl. zool.-bot. ver. Wien, iv: 227.**

See also Gomphoides occulta.

2498. Æschna —— (2 sp.). (Odonata.)

Locality: Florissant, Colo. Horizon: Oligocene.

1881.	**Scudder.**	**Bull. U. S. geol. surv. terr., vi: 293.**
1882.	"	**Proc. Bost. soc. nat. hist., xxi: 409.**
1883.	"	**Ann. rep. U. S. geol. surv. terr., xii: 284.**

2499. Æschna —— (larva). (Odonata.)

Locality: Florissant, Colo. Horizon: Oligocene.

1881.	**Scudder.**	**Bull. U. S. geol. surv. terr., vi: 293.**
1882.	"	**Proc. Bost. soc. nat. hist., xxi: 409.**
1883.	"	**Ann. rep. U. S. geol. surv. terr., xii: 284.**

See also Æschna larvata.

2500. Æschna dido (nymph). (Odonata.)

Locality: Rott, Rhenish Prussia. Horizon: Aquitanian.

1863.	**Hagen.**	**Palaeontogr., x: 263. *Pl.* 44, *fig.* 8.**
1870.	**L. Heyden.**	**Foss. Dipt. Rott, 30.**
1870.	"	**Palaeontogr., xvii: 266.**

2501. Æschna eudore (larva). (Odonata.)

Locality: Oeningen, Baden. Horizon: Tortonian.

1849. Heer. Insektenf. tertiärg. Oeningen, ii: 73–74. *Pl.* 8, *fig.* 4.
1850. Hagen. Rev. Odon. (Mém. soc. roy. sc. Liége, vi): 362.
1852. Giebel. Deutschl. petref., 639.
1856. " Insect. d. vorwelt, 278.

2502. Æschna larvata (larva). (Odonata.)

Locality: Florissant, Colo. Horizon: Oligocene.

1890. Scudder. Tert. ins. N. A., 145. *Pl.* 13, *fig.* 11.
See also Æschna ——— Scudder.

2503. Æschna metis. (Odonata.)

Locality: Radoboj, Croatia. Horizon: Mayencian.

1849. Heer. Insektenf. tertiärg. Oeningen, ii: 68–73. *Pl.* 5, *fig.* 1.
1856. Giebel. Insect. d. vorwelt, 277–278.
See also **Anax metis.**

2504. Æschna polydore. (Odonata.)

Locality: Oeningen, Baden. Horizon: Tortonian.

1849. Heer. Insektenf. tertiärg. Oeningen, ii: 63–67. *Pl.* 4, *fig.* 6.
1850. Hagen. Rev. Odon. (Mém. soc. roy. sc. Liége, vi): 362.
1852. Giebel. Deutschl. petref., 639.
1856. " Insect. d. vorwelt, 277.
See also Æschna (Æschna) polydore.

2505. Æschna (Æschna) polydore. (Odonata.)

Locality: Oeningen, Baden. Horizon: Tortonian.

1890. Scudder. Tert. ins. N. A., 142.
See also Æschna polydore.

2506. Æschna (Basiæschna) separata. (Odonata.)

Compared with Æ. janata Say.

Locality: Florissant, Colo. Horizon: Oligocene.

1890. Scudder. Tert. ins. N. A., 144–145. *Pl.* 13, *fig.* 15.

2507. Æschna (Æschna) solida. (Odonata.)

Compared with Æ. constricta.

Locality: Florissant, Colo. Horizon: Oligocene.

1890. Scudder. Tert. ins. N. A., 143–144. *Pl.* 13, *fig.* 1.

2508. Æschna tyche. (Odonata.)

Locality: Oeningen, Baden. Horizon: Tortonian.

1849. Heer. Insektenf. tertiärg. Oeningen, ii: 67–68. *Pl.* 4, *fig.* 7.
1850. Hagen. Rev. Odon. (Mém. soc. roy. sc. Liége, vi): 362.
1852. Giebel. Deutschl. petref., 639.
1856. " Insect. d. vorwelt, 277.
See also Æschna (Æschna) tyche.

2509. Æschna (Æschna) tyche. (Odonata.)

Locality: Oeningen, Baden. Horizon: Tortonian.

1890. Scudder. Tert. ins. N. A., 142.
See also Æschna tyche.

2510. **Agapetus æqualis.** (Rhyacophilidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1856. Hagen. Berendt, Bernst. befindl. organ. reste vorw., ii, th. i: 120–121. *Pl.* 8, *fig.* 30.
1864. " Phryg. synopsis synom., 3.
1864. " Verhandl. zool.-bot. gesellsch. Wien, xiv: 801.

2511. **Agraylea succinea.** (Hydroptilidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1864. Hagen. Verhandl. zool.-bot. gesellsch. Wien, xiv: 4.
1864. " Phryg. synopsis synom., 4.

2512. **Agrion** ——. (Odonata.)

Locality: Prussian amber. Horizon: Ligurian.

1845. Berendt. Bernst. befindl. organ. reste vorw., i: 57.

2513. **Agrion** ——. (Odonata.)

Compared with A. sanguineum.

Locality: Oeningen, Baden. Horizon: Tortonian.

1832. Curtis. Murch., Trans. geol. soc. Lond., (2), iii: 286. *Pl.* 34, *fig.* 6.

See also Agrion aglaope.

2514. **Agrion** ——. (Odonata.)

Locality: Aix, France. Horizon: Ligurian.

1847. Hope. Trans. ent. soc. Lond., iv: 252.

2515. **Agrion** —— (2 sp.). (Odonata.)

Locality: Florissant, Colo. Horizon: Oligocene.

1881. Scudder. Bull. U. S. geol. surv. terr., vi: 293.
1882. " Proc. Bost. soc. nat. hist., xxi: 409.
1883. " Ann. rep. U. S. geol. surv. terr., xii: 284.

2516. **Agrion** —— (nymph). (Odonata.)

Locality: Florissant, Colo. Horizon: Oligocene.

1881. Scudder. Bull. U. S. geol. surv. terr., vi: 293.
1882. " Proc. Bost. soc. nat. hist., xxi: 409.

See also Agrion telluris.

2517. **Agrion** ——. (Odonata.)

Locality: Gurnet Bay, Isle of Wight. Horizon: Bembridge Limestone.

1879. Woodward. Quart. journ. geol. soc. Lond., xxxv: 344.
1879. " Geol. mag. (n. s.), v: 89.

2518. **Agrion aglaope.** (Odonata.)

Compared with A. elegans Lind.

Locality: Oeningen, Baden. Horizon: Tortonian.

1849. Heer. Insektenf. tertiärg. Oeningen, ii: 59–62. *Pl.* 4, *fig.* 4.
1850. Hagen. Rev. Odon. (Mém. soc. roy. sc. Liége, vi): 356.
1852. Giebel. Deutschl. petref., 638.
1856. " Insect. d. vorwelt, 272.

1865. Heer. Urwelt der Schweiz, 369.
1872. " Monde prim. Suisse, 453.
1876. " Prim. world Switz., ii: 24.
1879. " Urwelt der Schweiz, 2e aufl., 395.
1890. Scudder. Tert. ins. N. A., 137.
See also **Agrion** ——— Curtis.

2519. Agrion aglaopheme. (Odonata.)

Locality: Oeningen, Baden. Horizon: Tortonian.

1849. Heer. Insektenf. tertiärg. Oeningen, ii: 62–63. *Pl.* 4, *fig.* 5.
1850. Hagen. Rev. Odon. (Mém. soc. roy. sc. Liége, vi): 356.
1852. Giebel. Deutschl. petref., 638.
1856. " Insect. d. vorwelt, 273.

2520. Agrion antiquum. (Odonata.)

Locality: Prussian amber. Horizon: Ligurian.

1848. Pictet. MSS.
1848. Hagen. Stett. ent. zeit., ix: 7.
1850. " Rev. Odon. (Mém. soc. roy. sc. Liége, vi): 356–357.
1854. " Verhandl. zool.-bot. ver. Wien, iv: 227.
1856. Giebel. Insect d. vorwelt, 273.
1856. Pict.-Hag. Berendt, Bernst. befindl. organ. reste vorw., ii, th. i: 78–80. *Pl.* 6, *figs.* 4*b–d*; *Pl.* 8, *fig.* 11.
See also Argia antiqua, Platycnemis antiqua.

2521. Agrion (Lestes) coloratum. (Odonata.)

Locality: Radoboj, Croatia. Horizon: Mayencian.

1841. Charpentier. Neues jahrb. min., 1841: 332–337 (unnamed). *Pl.* 1.
1849. Heer. Insektenf. tertiärg. Oeningen, ii: 55–56.
1856. Giebel. Insect. d. vorwelt, 273.
See also Lestes coloratus.

2522. Agrion exsularis. (Odonata.)

Locality: Florissant, Colo. Horizon: Oligocene.

1890. Scudder. Tert. ins. N. A., 139–140. *Pl.* 13, *fig.* 6.

2523. Agrion icarus. (Odonata.)

Locality: Rott, Rhenish Prussia. Horizon: Aquitanian.

1863. Hagen. Palaeontogr., x: 260. *Pl.* 44, *fig.* 5.
See also Platycnemis icarus.

2524. Agrion iris. (Odonata.)

Compared with A. fasciatum and longicaudum.

Locality: Oeningen, Baden. Horizon: Tortonian.

1879. Heer. Urwelt der Schweiz, 2e aufl., 395. *Fig.* 275.
See also Lestes iris.

2525. Agrion leucosia. (Odonata.)

Compared with A. longicaudum.

Locality: Oeningen, Baden. Horizon: Tortonian.

1865. Heer. Urwelt der Schweiz, 369.
1872. " Monde prim. Suisse, 453.
1876. " Prim. world Switz., ii: 24.
1879. " Urwelt der Schweiz, 2e aufl., 395.
See also **Agrion (Lestes) leucosia**, etc.

2526. Agrion (Lestes) leucosia. (Odonata.)

Compared with A. longicaudum.

Locality: Oeningen, Baden. Horizon: Tortonian.

1849. Heer. Insektenf. tertiärg. Oeningen, ii: 56–57. *Pl.* 4, *fig.* 1.
1856. Giebel. Insect. d. vorwelt, 273–274.
See also Lestes leucosia, Agrion leucosia.

2527. Agrion (Lestes) ligea. (Odonata.)

Locality: Oeningen, Baden. Horizon: Tortonian.

1849. Heer. Insektenf. tertiärg. Oeningen, ii: 57–59. *Pl.* 4, *fig.* 2.
1856. Giebel. Insect. d. vorwelt, 274.
See also Lestes ligea.

2528. Agrion mascescens. (Odonata.)

Locality: Florissant, Colo. Horizon: Oligocene.

890. Scudder. Tert. ins. N. A., 138–139. *Pl.* 13, *figs.* 8, 9.

2529. Agrion mysis (nymph). (Odonata.)

Locality: Rott, Rhenish Prussia. Horizon: Aquitanian.

1863. Hagen. Palaeontogr., x: 269. *Pl.* 44, *fig.* 6.

2530. Agrion parthenope. (Odonata.)

Compared with A. fasciatum, South Africa..

Locality: Oeningen, Baden. Horizon: Tortonian.

1852. Giebel. Deutschl. petref., 638.
1865. Heer. Urwelt der Schweiz, 369.
1872. " Monde prim. Suisse, 453.
1876. " Prim. world Switz., ii: 24.
1879. " Urwelt der Schweiz, 2^e aufl., 395.
See also Agrion (Sterope) parthenope, etc.

2531. Agrion (Sterope) parthenope. (Odonata.)

Locality: Oeningen, Baden. Horizon: Tortonian.

1849. Heer. Insektenf. tertiärg. Oeningen, ii: 45–55. *Pl.* 3, *fig.* 11.
1856. Giebel. Insect. d. vorwelt, 274–275.
See also Agrion parthenope, Sympycna parthenope, Sterope parthenope.

2532. Agrion (Lestes) peisinoe. (Odonata.)

Locality: Oeningen, Baden. Horizon: Tortonian.

1849. Heer. Insektenf. tertiärg. Oeningen, ii: 59. *Pl.* 4, *fig.* 3.
1856. Giebel. Insect. d. vorwelt, 274.
See also Lestes peisinoe.

2533. Agrion telluris (nymph). (Odonata.)

Locality: Florissant, Colo. Horizon: Oligocene.

1890. Scudder. Tert. ins. N. A., 140–141. *Pl.* 13, *fig.* 10.
See also Agrion ——— Scudder.

2534. Agrion thais (nymph). (Odonata.)

Locality: Rott, Rhenish Prussia. Horizon: Aquitanian.

1863. Hagen. Palaeontogr., x: 269 (pupa). *Pl.* 44, *fig.* 7.

2535. Agrypnia ——. (Trichoptera.)

Compared with A. pagetana.

Locality: Prussian amber. Horizon: Ligurian.

1856. Germar. Berendt, Bernst. befindl. organ. reste vorw., ii, th. i: **101.**
See also Limnophilus —— Hagen.

2536. Amphientomum ——. (Psocina.)

Locality: Prussian amber. Horizon: Ligurian.

1845. Berendt. Bernst. befindl. organ. reste vorw., i: 57.

2537. Amphientomum paradoxum. (Psocina.)

Locality: Prussian amber. Horizon: Ligurian.

1854. Pictet. Hagen, Verhandl. zool.-bot. ver. Wien, iv: 225 (undescr.).
1854. " Traité de paléont., 2^e^ éd., ii: 376. *Pl.* 40, *figs.* 27, 27*ab*.
1856. " Berendt, Bernst. befindl. organ. reste vorw., ii, th. i: 61–64. *Pl.* 7, *figs.* 21*b–d*; *pl.* 8, *figs.* 10*a–e*.
1865. Hagen. Ent. monthl. mag., ii: 149.
1866. " Verhandl. zool.-bot. gesellsch. Wien, xvi: 204.
1866. " Psoc. Emb. synopsis, 4.
1882. " Stett. ent. zeit., xliii: 268–276. *Pl.* 1, *fig.* 6 (9 *figs.*).

2538. Anax metis. (Odonata.)

Locality: Radoboj, Croatia. Horizon: Mayencian.

1850. Hagen. Rev. Odon. (Mém. soc. roy. sc. Liége, vi): 361.
1852. Giebel. Deutschl. petref., 639.
1890. Scudder. Tert. ins. N. A., 142.
See also **Æschna** metis.

2539. Apheilocheira ——. (Hydropsychidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1845. Berendt. Bernst. befindl. organ. reste vorw., i: 57 (**Aphilocheira**).

2540. Apheilocheira fusconigra. (Hydropsychidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1854. Pictet. Traité de paléont., 2^e^ éd., ii: 376 (undescr.).
1856. " Berendt, Bernst. befindl. organ. reste vorw., ii, th. i: 115. *Pl.* 7, *fig.* 18.
1864. Hagen. Phryg. synopsis synom., 7 (=Polycentropus dubius).
1864. " Verhandl. zool.-bot. gesellsch. Wien, xiv: 805 (=Polycentropus dubius).
See also Polycentropus fusconiger, etc.

Aphilocheira ——. See Apheilocheira ——.

2541. Archipsocus puber. (Psocina.)

Locality: Prussian amber. Horizon: Ligurian.

1882. Künow. MSS.
1882. Hagen. Stett. ent. zeit., xliii: 222–225. *Pl.* 1, *figs.* 10^{1-2}.

2542. Argia antiqua. (Odonata.)

Locality: Prussian amber. Horizon: Ligurian.

1854. **Hagen.** Verhandl. zool.-bot. ver. Wien, iv: 227 (Argya).
1856. " Berendt, Bernst. befindl. organ. reste vorw., ii, th. i: 79–80 (Argya).

See also Agrion antiquum, etc.

Argya antiqua. See Argia antiqua.

2543. Ascalaphus edwardsii. (Hemerobina.)

Compared with A. barbarus, S. Europe.

Locality: Saint-Gérand le Puy, France. Horizon: Aquitanian.

1870. Oustalet. Ann. sc. géol., ii, art. 3: 93–94. *Pl.* 2, *figs.* 8, 9.

2544. Ascalaphus proavus. (Hemerobina.)

Compared with A. subvertens, Venezuela.

Locality: Stösschen, bei Linz, Austria. Horizon: Aquitanian.

1858. Hagen. Palaeontogr., v: 125–126. *Pl.* 25.

See also Suphalasca proavus.

2545. Aspatherium geinitzii. (Trichoptera.)

Locality: Prussian amber. Horizon: Ligurian.

1851. Kolenati. Abhandl. böhm. gesellsch. wiss., (5), vi: 15 (undescr.).

2546. Atropos succinea. (Psocina.)

Compared with A. divinatoria.

Locality: Prussian amber. Horizon: Ligurian.

1882. Künow. MSS.
1882. Hagen. Stett. ent. zeit., xliii: 231, 289–292. *Pl.* 2, *figs.* $3^{1,\,1a\text{–}c,\,2,\,3,\,3b}$.
1883. " Stett. ent. zeit., xliv: 296.

See also Troctes succinicus.

2547. Bætis ——. (Ephemeridæ.)

Locality: Prussian amber. Horizon: Ligurian.

1845. Berendt. Bernst. befindl. organ. reste vorw., i: 57.

2548. Bætis anomala. (Ephemeridæ.)

Locality: Prussian amber. Horizon: Ligurian.

1854. Pictet. Hagen, Verhandl. zool.-bot. ver. Wien, iv: 227 (undescr.).
1844. " Traité de paléont., 2e éd., ii: 371 (undescr.).
1856. Pictet-Hagen. Berendt, Bernst. befindl. organ. reste vorw., ii, th. i: 75–76. *Pl.* 6, *fig.* 1*b–c*.

See also Cronicus anomalus.

2549. Bætis gigantea. (Ephemeridæ.)

Locality: Prussian amber. Horizon: Ligurian.

1856. Hagen. Berendt, Bernst. befindl. organ. reste vorw., ii, th. i: 75.

2550. Bætis grossa. (Ephemeridæ.)

Locality: Prussian amber. Horizon: Ligurian.

1856. Hagen. Berendt, Bernst. befindl. organ. reste vorw., ii, th. i: 75.

2551. Bætis longipes. (Ephemeridæ.)

Locality: Prussian amber. Horizon: Ligurian.

1854. Hagen. Verhandl. zool.-bot. ver. Wien, iv: 227 (undescr.).
1856. " Berendt, Bernst. befindl. organ. reste vorw., ii, th. i: 76–77.

2552. Basiæschna ———. (Odonata.)

Locality: Bournemouth, England. Horizon: Middle Eocene.

1890. Scudder. Tert. ins. N. A., 142.
See also Æschna ——— Goss.

Basiæschna separata. See Æschna (Basiæschna) separata.

2553. Bittacus ———. (Panorpidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1845. Berendt. Bernst. befindl. organ. reste vorw., i: 57.

2554. Bittacus antiquus. (Panorpidæ.)

Compared with B. italicus, Europe.

Locality: Prussian amber. Horizon: Ligurian.

1854. Pictet. Hagen, Verhandl. zool.-bot. ver. Wien, iv: 229 (undescr.).
1854. " Traité de paléont., 2e éd., ii: 379. *Pl.* 40, *fig.* 26.
1856. " Berendt, Bernst. befindl. organ. reste vorw., ii, th. i: 92. *Pl.* 7, *fig.* 23; *pl.* 8, *fig.* 22.

2555. Bittacus reticulatus. (Panorpidæ.)

Locality: Radoboj, Croatia. Horizon: Mayencian.

1849. Heer. Insektenf. tertiärg. Oeningen, ii: 90. *Pl.* 5, *fig.* 11.
1852. Giebel. Deutschl. petref., 640.
1856. " Insect. d. vorwelt, 258.

2556. Bittacus validus. (Panorpidæ.)

Compared with B. testaceus.

Locality: Prussian amber. Horizon: Ligurian.

1854. Hagen. Verhandl. zool.-bot. ver. Wien, iv: 229 (undescr.).
1856. " Berendt, Bernst. befindl. organ. reste vorw., ii, th. i: 92. *Pl.* 8, *fig.* 23.

2557. Bothromicromus lachlani. (Hemerobina.)

Compared with Micromus hirtus, Europe.

Locality: Quesnel, British Columbia. Horizon: ———.

1878. Scudder. Add. ins. fauna Quesnel, 6–7.
1878. " Rep. progr. geol. surv. Can., 1876–'77: 462–463.
1878. " Rapp. oper. comm. géol. Can., 1876–'77: 520–521.
1890. " Tert. ins. N. A., 164–165. *Pl.* 2, *figs.* 7–10.

2558. Brachycentrus labialis. (Sericostomidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1864. Hagen. Phryg. synopsis synom., 9.
1864. " Verhandl. zool.-bot. gesellsch. Wien, xiv: 807.
See also Hydronantia labialis.

2559. Cæcilius abnormis. (Psocina.)

Locality: Prussian amber. Horizon: Ligurian.

1866. Hagen. Psoc. Emb. synopsis, 4.
1866. " Verhandl. zool.-bot. gesellsch. Wien, xvi: 204.
See also Elipsocus abnormis, etc.

2560. Cæcilius debilis. (Psocina.)

Compared with C. obsoletus.

Locality: Prussian amber. Horizon: Ligurian.

1882. Hagen. Stett. ent. zeit., xliii: 284-287. *Pl.* 1, ***figs.*** 4^{1-3}.
See also Psocus debilis, Epipsocus debilis.

2561. Cæcilius pilosus. (Psocina.)

Locality: Prussian amber. Horizon: Ligurian.

1882. Hagen. Stett. ent. zeit., xliii: 283-284. *Pl.* 1, *figs.* $3^{1-2, 4-7}$.

2562. Cæcilius proavus. (Psocina.)

Compared with C. aridus, C. dimidiatus.

Locality: Prussian amber. Horizon: Ligurian.

1866. Hagen. Stett. ent. zeit., xxvii: 206.
1866. " Psoc. Emb. synopsis, 6.
1882. " Stett. ent. zeit., xliii: 280-283. *Pl.* 1, *figs.* $2^{1-8, 8a, 9-11}$.
1866. " Verhandl. zool.-bot. gesellsch. Wien, xvi: 206
See also Psocus proavus.

2563. Calopteryx? —— (nymph). (Odonata.)

Locality: Prussian amber. Horizon: Ligurian.

1854. Hagen. Verhandl. zool.-bot. ver. Wien, iv: 227 (undescr.).

2564. Calotermes affinis. (Termitina.)

Locality: Prussian amber. Horizon: Ligurian.

1854. Hagen. Verhandl. zool.-bot. ver. Wien, iv: 222.
1858. " Catal. Neuropt. Brit. mus., 8.
1858. " Linn. entom., xii: 53-54.
1860. " Linn. entom., xiv: 100-101.
See also Termes (Calotermes) affinis, etc.

2565. Calotermes berendtii. (Termitina.)

Locality: Prussian amber. Horizon: Ligurian.

1854. Hagen. Verhandl. zool.-bot. ver. Wien, iv: 222 (undescr.).
1858. " Catal. Neuropt. Brit. mus., 7.
1858. " Linn. entom., xii: 49-51.
1860. " Linn. entom., xiv: 100.
See also Termes berendtii, etc.

2566. Calotermes rhenanus. (Termitina.)

Locality: Rott, Rhenish Prussia. Horizon: Aquitanian.

1863. Hagen. Palaeontogr., x: 250-251. *Pl.* 44, ***figs.*** 1-2.

2551. Bætis longipes. (Ephemeridæ.)

Locality: Prussian amber. **Horizon:** Ligurian.

1854. **Hagen.** Verhandl. zool.-bot. ver. Wien, iv: 227 (undescr.).
1856. " Berendt, Bernst. befindl. organ. reste vorw., ii, th. i: 76–77.

2552. Basiæschna ———. (Odonata.)

Locality: Bournemouth, England. **Horizon:** Middle Eocene.

1890. **Scudder.** Tert. ins. N. A., 142.
See also Æschna ——— Goss.

Basiæschna separata. See Æschna (Basiæschna) separata.

2553. Bittacus ———. (Panorpidæ.)

Locality: Prussian amber. **Horizon:** Ligurian.

1845. **Berendt.** Bernst. befindl. organ. reste vorw., i: 57.

2554. Bittacus antiquus. (Panorpidæ.)

Compared with B. italicus, Europe.

Locality: Prussian amber. **Horizon:** Ligurian.

1854. **Pictet.** Hagen, Verhandl. zool.-bot. ver. Wien, iv: 229 (undescr.).
1854. " Traité de paléont., 2e éd., ii: 379. *Pl.* 40, *fig.* 26.
1856. " Berendt, Bernst. befindl. organ. reste vorw., ii, th. i: 92. *Pl.* 7, *fig.* 23; *pl.* 8, *fig.* 22.

2555. Bittacus reticulatus. (Panorpidæ.)

Locality: Radoboj, Croatia. **Horizon:** Mayencian.

1849. **Heer.** Insektenf. tertiärg. Oeningen, ii: 90. *Pl.* 5, *fig.* 11.
1852. **Giebel.** Deutschl. petref., 640.
1856. " Insect. d. vorwelt, 258.

2556. Bittacus validus. (Panorpidæ.)

Compared with B. testaceus.

Locality: Prussian amber. **Horizon:** Ligurian.

1854. **Hagen.** Verhandl. zool.-bot. ver. Wien, iv: 229 (undescr.).
1856. " Berendt, Bernst. befindl. organ. reste vorw., ii, th. i: 92. *Pl.* 8, *fig.* 23.

2557. Bothromicromus lachlani. (Hemerobiina.)

Compared with Micromus hirtus, Europe.

Locality: Quesnel, British Columbia. **Horizon:** ———.

1878. **Scudder.** Add. ins. fauna Quesnel, 6–7.
1878. " Rep. progr. geol. surv. Can., 1876–'77: 462–463.
1878. " Rapp. oper. comm. géol. Can., 1876–'77: 520–521.
1890. " Tert. ins. N. A., 164–165. *Pl.* 2, *figs.* 7–10.

2558. Brachycentrus labialis. (Sericostomidæ.)

Locality: Prussian amber. **Horizon:** Ligurian.

1864. **Hagen.** Phryg. synopsis synom., 9.
1864. " Verhandl. zool.-bot. gesellsch. Wien, xiv: 807.
See also Hydronantia labialis.

2559. Cæcilius abnormis. (Psocina.)

Locality: Prussian amber. Horizon: Ligurian.

1866. Hagen. Psoc. Emb. synopsis, 4.
1866. " Verhandl. zool.-bot. gesellsch. Wien, xvi: 204.
See also Elipsocus abnormis, etc.

2560. Cæcilius debilis. (Psocina.)

Compared with C. obsoletus.

Locality: Prussian amber. Horizon: Ligurian.

1882. Hagen. Stett. ent. zeit., xliii: 284-287. *Pl.* 1, *figs.* 4^{1-3}.
See also Psocus debilis, Epipsocus debilis.

2561. Cæcilius pilosus. (Psocina.)

Locality: Prussian amber. Horizon: Ligurian.

1882. Hagen. Stett. ent. zeit., xliii: 283-284. *Pl.* 1, *figs.* $3^{1-2, 4-7}$.

2562. Cæcilius proavus. (Psocina.)

Compared with C. aridus, C. dimidiatus.

Locality: Prussian amber. Horizon: Ligurian.

1866. Hagen. Stett. ent. zeit., xxvii: 206.
1866. " Psoc. Emb. synopsis, 6.
1882. " Stett. ent. zeit., xliii: 280-283. *Pl.* 1, *figs.* $2^{1-8, 8a, 9-11}$.
1866. " Verhandl. zool.-bot. gesellsch. Wien, xvi: 206
See also Psocus proavus.

2563. Calopteryx? ——— (nymph). (Odonata.)

Locality: Prussian amber. Horizon: Ligurian.

1854. Hagen. Verhandl. zool.-bot. ver. Wien, iv: 227 (undescr.).

2564. Calotermes affinis. (Termitina.)

Locality: Prussian amber. Horizon: Ligurian.

1854. Hagen. Verhandl. zool.-bot. ver. Wien, iv: 222.
1858. " Catal. Neuropt. Brit. mus., 8.
1858. " Linn. entom., xii: 53-54.
1860. " Linn. entom., xiv: 100-101.
See also Termes (Calotermes) affinis, etc.

2565. Calotermes berendtii. (Termitina.)

Locality: Prussian amber. Horizon: Ligurian.

1854. Hagen. Verhandl. zool.-bot. ver. Wien, iv: 222 (undescr.).
1858. " Catal. Neuropt. Brit. mus., 7.
1858. " Linn. entom., xii: 49-51.
1860. " Linn. entom., xiv: 100.
See also Termes berendtii, etc.

2566. Calotermes rhenanus. (Termitina.)

Locality: Rott, Rhenish Prussia. Horizon: Aquitanian.

1863. Hagen. Palaeontogr., x: 250-251. *Pl.* 44, *figs.* 1-2.

2567. Celithemis cellulosa. (Odonata.)

Locality: Rott, Rhenish Prussia. Horizon: Aquitanian.

1868. Brauer. Verhandl. zool.-bot. gesellsch. Wien, xviii: 738.
1868. " Verz. bek. Neuropt., 86.
See also Libellula cellulosa, L. ceres, etc.

2568. Chauliodes ———. (Sialina.)

Locality: Prussian amber. Horizon: Ligurian.

1845. Berendt. Bernst. befindl. organ. reste vorw., i: 57.

2569. Chauliodes prisca. (Sialina.)

Locality: Prussian amber. Horizon: Ligurian.

1854. Pictet. Hagen, Verhandl. zool.-bot. ver. Wien, iv: 228 (undescr.).
1854. " Traité de paléont., 2e éd., ii: 377. *Pl.* 40, *figs.* 24, 24*a*.
1856. " Berendt, Bernst. befindl. organ. reste vorw., ii, th. i: 82. *Pl.* 7, *fig.* 22.

2570. Chrysopa ———. (Hemerobina.)

Compared with C. perla Linn.

Locality: Thalheim, Siebenbürgen. Horizon: ———.

1855. Andrä. Foss. flora Siebenb., 26. *Pl.* 5, *figs.* 3, 3*a*.
1856. Giebel. Insect. d. vorwelt, 262–263.
1866. Hagen. Stett. ent. zeit., xvi: 399 (a Chrysopa ?).

2571. Chrysopa ———. (Hemerobina.)

Locality: Prussian amber. Horizon: Ligurian.

1845. Berendt. Bernst. befindl. organ. reste vorw., i: 57.

2572. Chrysopa (vic.) ———. (Hemerobina.)

Locality: Florissant, Colo. Horizon: Oligocene.

1881. Scudder. Bull. U. S. geol. surv. terr., vi: 293.
See also Palæochrysa ———, Tribochrysa ———.

Chrysopa or Hemerobius ———. See Hemerobius (or Chrysopa) ———.

2573. Coniopteryx timida. (Coniopterygidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1866. Hagen. Stett. ent. zeit., xxvii: 401.
See also Coniortes ——— Hagen, Coniortes timidus.

2574. Coniortes, (Osmylus, or Nymphes) ——— (larva).

Locality: Prussian amber. Horizon: Ligurian.

1856. Hagen. Berendt, Bernst. befindl. organ. reste vorw., ii, th. i: 90.
See also Coniopteryx timida, etc.

2575. Coniortes timidus. (Coniopterygidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1854. Hagen. Verhandl. zool.-bot. ver. Wien, iv: 228 (undescr.).
1856. " Berendt, Bernst. befindl. organ. reste vorw., ii, th. i: 89.
See also Coniopteryx timida, etc.

2576. Cordulia platyptera. (Odonata.)

Locality: Radoboj, Croatia. Horizon: Mayencian.

1849. Heer. Insektenf. tertiärg. Oeningen, ii: 74–79. *Pl.* 5, *fig.* 3.
1850. Hagen. Rev. Odon. (Mém. soc. roy. sc. Liége, vi): 363.
1852. Giebel. Deutschl. petref., 639.
1856. " Insect. d. vorwelt, 288–289.
See also Libellula platyptera.

2577. Cordulia scheuchzeri. (Odonata.)

Locality: Monte Bolca, Italy. Horizon: Ligurian.

[1723. Scheuchzer. Herb. diluv. (unnamed). *Pl.* 5, *fig.* 2.]
1855. Massalongo. Nereid. foss., 31 (undescr.).
1856. " Stud. paleont., 17–18. *Pl.* 2, *fig.* 7.
1886. Omboni. Atti r. ist. Ven., (6), iv: 1425–1426. *Pl.* 2, *fig.* 6.
1886. " Ins. foss. Ven., 5–6. *Pl.* 2, *fig.* 6.

2578. Corydalis ? —— (leg).

Locality: Rott, Rhenish Prussia. Horizon: Aquitanian.

1862. Heyden. Palaeontogr., x: 77. *Pl.* 10, *fig.* 26.
1863. Hagen. Palaeontogr., x: 250 (not Corydalis, perhaps Termes).

2579. Cronicus anomalus. (Ephemeridæ.)

Locality: Prussian amber. Horizon: Ligurian.

1871. Eaton. Trans. ent. soc. Lond., 1871: 133–134. *Pl.* 6, *fig.* 8.
1885. Scudder. Zittel, Handb. palaeont., i, th. ii: 774. *Fig.* 976.
1886. " Zittel-Barrois, Traité de paléont., ii: 774. *Fig.* 993.
See also Bætis anomala.

2580. Cyrnus subatomarius. (Trichoptera.)

Locality: Prussian amber. Horizon: Ligurian.

1851. Kolenati. Abhandl. böhm. gesellsch. wiss., (5), vi: 15 (undescr.).

2581. Derobrochus abstractus. (Hydropsychidæ.)

Locality: Florissant, Colo. Horizon: Oligocene.

1890. Scudder. Tert. ins. N. A., 183.

2582. Derobrochus æternus. (Hydropsychidæ.)

Locality: Florissant, Colo. Horizon: Oligocene.

1890. Scudder. Tert. ins. N. A., 184.

2583. Derobrochus cænulentus. (Hydropsychidæ.)

Locality: Florissant, Colo. Horizon: Oligocene.

1890. Scudder. Tert. ins. N. A., 183.

2584. Derobrochus commoratus. (Hydropsychidæ.)

Locality: Florissant, Colo. Horizon: Oligocene.

1890. Scudder. Tert. ins. N. A., 184.

2585. Derobrochus crateræ. (Hydropsychidæ.)

Locality: Florissant, Colo. Horizon: Oligocene.

1890. Scudder. Tert. ins. N. A., 186. *Pl.* 13, *fig.* 13; *Pl.* 15, *fig.* 4.

2586. Derobrochus frigescens. (Hydropsychidæ.)

Locality: Florissant, Colo. Horizon: Oligocene.

1885. Scudder. Zittel, Handb. palaeont., i, th. ii: 779. *Fig.* 986.
1886. " Zittel-Barrois, Traité de paléont., ii: 779. *Fig.* 1003.
1890. " Tert. ins. N. A., 185–186. *Pl.* 15, *figs.* 6, 16.

2587. Derobrochus marcidus. (Hydropsychidæ.)

Locality: Florissant, Colo. Horizon: Oligocene.

1890. Scudder. Tert. ins. N. A., 185. *Pl.* 15, *fig.* 2.

2588. Diplax? ——— (Odonata.)

Compared with D. minnscula Ramb.

Locality: Quesnel, British Columbia. Horizon: ———.

1877. Scudder. Rep. progr. geol. surv. Can., 1875–'76: 280.
1877. " Ins. tert. Quesn., 15.
1877. " Rapp. opér. comm. géol. Can., 1875–'76: 310.

2589. Dysagrion ——— (3 sp.). (Odonata.)

Locality: Green River, Wyo. Horizon: Oligocene.

1882. Scudder. Proc. Bost. soc. nat. hist., xxi: 409.
1883. " Ann. rep. U. S. geol. surv. terr., xii: 284.
See also the following species.

2590. Dysagrion fredericii. (Odonata.)

Locality: Green River, Wyo. Horizon: Oligocene.

1878. Scudder. Bull. U. S. geol. surv. terr., iv: 536–537, 775.
1890. " Tert. ins. N. A., 130–131. *Pl.* 6, *figs.* 2, 5, 6, 9, 10, 14, 17.
See also Dysagrion ———.

2591. Dysagrion lakesii. (Odonata.)

Locality: Green River, Wyo. Horizon: Oligocene.

1890. Scudder. Tert. ins. N. A., 132.
See also Dysagrion ———.

2592. Dysagrion packardii. (Odonata.)

Locality: Green River, Wyo. Horizon: Oligocene.

1885. Scudder. Zittel, Handb. palaeont., i, th. ii: 776. *Fig.* 979.
1886. " Zittel-Barrois, Traité de paléont., ii: 776. *Fig.* 996.
1890. " Tert. ins. N. A., 132–133. *Pl.* 6, *figs.* 1, 3, 11.
See also Dysagrion ———.

2593. Elipsocus abnormis. (Psocina.)

Compared with E. hyalinus.

Locality: Prussian amber. Horizon: Ligurian.

1882. Hagen. Stett. ent. zeit., xliii: 287–289. *Pl.* 1, *fig.* 7.
See also Psocus abnormis, Cæcilius abnormis, Philotarsus abnormis.

2594. Elipsocus kühli. (Psocina.)

Locality: Prussian amber. Horizon: Ligurian.

1883. Kolbe. Stett. ent. zeit., xliv: 188–190.

2595. Embia ——. (Embidina.)

Locality: Prussian amber. Horizon: Ligurian.

1845. Berendt. Bernst. befindl. organ. reste vorw., i: 57.

2596. Embia antiqua. (Embidina.)

Locality: Prussian amber. Horizon: Ligurian.

1854. Pictet. Traité de paléont., 2^e éd., ii: 370. *Pl.* 40, *fig.* 28.
1854. Hagen. Verhandl. zool.-bot. ver. Wien, iv: 225.
1856. Pictet. Berendt, Bernst. befindl. organ. reste vorw., ii, th. i: 56–57. *Pl.* 5, *figs.* 7 *b–f.*
1866. Hagen. Psoc. Emb. synopsis, 21.
1866. " Verhandl. zool.-bot. gesellsch. Wien, xvi: 221.
1885. Scudder. Zittel, Handb. palaeont., i, th. ii: 773.

See also Oligotoma antiqua.

2597. Empheria reticulata. (Psocina.)

Locality: Prussian amber. Horizon: Ligurian.

1854. Hagen. Verhandl. zool.-bot. ver. Wien, iv: 225 (undescr.).
1856. " Berendt, Bernst. befindl. organ. reste vorw., ii, th. i: 64. *Pl.* 8, *fig.* 6.
1865. " Ent. monthl. mag., ii: 171.
1866. " Psoc. Emb. synopsis, 7.
1866. " Verhandl. zool.-bot. gesellsch. Wien, xvi: 207.
1882. " Stett. ent. zeit., xliii: 217–221. *Pl.* 1, *fig.* 8 (12 *figs.*).

2598. Empheria villosa. (Psocina.)

Locality: Prussian amber. Horizon: Ligurian.

1882. Hagen. Stett. ent. zeit., xliii: 221–222. *Pl.* 1, *figs.* 9^{1-6}.

Entermes ——. See Eutermes ——.

2599. Ephemera ——. (Ephemeridæ.)

Locality: Prussian amber. Horizon: Ligurian.

1832. Burmeister. Handb. ent., i: 637.
1836. " Man. ent., 578.

2600. Ephemera (or Phryganea) ——.

Locality: Oeningen, Baden. Horizon: Tortonian.

1820. Schlotheim. Petrefactenk., 43.

2601. Ephemera ——. (Ephemeridæ.)

Locality: Prussian amber. Horizon: Ligurian.

1742. Sendel. Hist. succ., 60–61 (inter ephemeras minores). *Pl.* 1, *fig.* 33.
1825. Guérin. Dict. class. d'hist. nat., viii: 580 (ephemère).
1829. Serres. Géogn. terr. tert., 241.
1830. Berendt. Insekten im bernstein, 35.

2602. Ephemera ——. (Ephemeridæ.)

Locality: Vegetable Creek, Australia. Horizon: ——

1883. Wilkinson. Abstr. proc. Linn. soc. N. S. Wales, Aug. 29, 1883: 4.

2603. Ephemera exsucca. (Ephemeridæ.)

Locality: Florissant, Colo. Horizon: Oligocene.

1890. Scudder. Tert. ins. N. A., 124. *Pl.* 12, *fig.* 9.

2604. Ephemera immobilis (larva). (Ephemeridæ.)

Locality: Florissant, Colo. Horizon: Oligocene.

1890. Scudder. Tert. ins. N. A., 121. *Pl.* 12, *fig.* 5.

2605. Ephemera interempta (nymph). (Ephemeridæ.)

Locality: Florissant, Colo. Horizon: Oligocene.

1890. Scudder. Tert. ins. N. A., 123–124.

2606. Ephemera macilenta (larva). (Ephemeridæ.)

Locality: Florissant, Colo. Horizon: Oligocene.

1890. Scudder. Tert. ins. N. A., 122. *Pl.* 12, *figs.* 4, 10.

2607. Ephemera œningensis. (Ephemeridæ.)

Locality: Oeningen, Baden. Horizon: Tortonian.

1865. Heer. Urwelt der Schweiz, 370.
1872. " Monde prim. Suisse, 453.
1876. " Prim. world Switz., ii: 25.
1879. " Urwelt der Schweiz, 2^e aufl., 395.

2608. Ephemera pumicosa (larva, nymph). (Ephemeridæ.)

Locality: Florissant, Colo. Horizon: Oligocene.

1890. Scudder. Tert. ins. N. A., 122–123. *Pl.* 12, *figs.* 7, 15, 16.

2609. Ephemera tabifica (nymph). (Ephemeridæ.)

Locality: Florissant, Colo. Horizon: Oligocene.

1890. Scudder. Tert. ins. N. A., 120.

2610. Epipsocus ciliatus. (Psocina.)

Compared with E. delicatus, E. pictus.

Locality: Prussian amber. Horizon: Ligurian.

1866. Hagen. Psoc. Emb. synopsis, 7.
1866. " Verhandl. zool.-bot. gesellsch. Wien, xvi: 207.
1882. " Stett. ent. zeit., xliii: 276–280. *Pl.* 1, *figs.* 5^{1-11}.

See also Psocus ciliatus.

2611. Epipsocus debilis. (Psocina.)

Locality: Prussian amber. Horizon: Ligurian.

1866. Hagen. Psoc. Emb. synopsis, 7.
1866. " Verhandl. zool.-bot. gesellsch. Wien, xvi: 207.

See also Psocus debilis, Cæcilius debilis.

2612. Epipsocus tener. (Psocina.)

Locality: Prussian amber. Horizon: Ligurian.

1866. Hagen. Psoc. Emb. synopsis, 7.
1866. " Verhandl. zool.-bot. gesellsch. Wien, xvi: 207.

See also Psocus tener, etc.

2613. Eutermes —— (2 sp.). (Termitina.)

Locality: Florissant, Colo. Horizon: Oligocene.

1881. Scudder. Harv. univ. bull., ii: 219.
1881. " Bull. U. S. geol. surv. terr., vi: 294.
1883. " Ann. rep. U. S. geol. surv. terr., xii: 285.

2614. Eutermes —— (worker). (Termitina.)

Locality: Florissant, Colo. Horizon: Oligocene.

1890. Scudder. Tert. ins. N. A., 116.

2615. Eutermes antiquus. (Termitina.)

Locality: Prussian amber. Horizon: Ligurian.

1854. Hagen. Verhandl. zool.-bot. ver. Wien, iv: 222.
See also Termes (Eutermes) antiquus.

Eutermes croaticus. See Termes croaticus.

Eutermes debilis. See Termes debilis.

Eutermes diaphanus. See Termes (Eutermes) diaphanus.

2616. Eutermes fossarum. (Termitina.)

Locality: Florissant, Colo. Horizon: Oligocene.

1883. Scudder. Proc. Amer. acad. arts sc., xix: 143–144.
1890. " Tert. ins. N. A., 115. *Pl.* 12, *fig.* 20.

2617. Eutermes meadii. (Termitina.)

Locality: Florissant, Colo. Horizon: Oligocene.

1883. Scudder. Proc. Amer. acad. arts sc., xix: 144–145.
1890. " Tert. ins. N. A., 115–116. *Pl.* 12, *figs.* 12, 17.

Eutermes mœstus. See Termes (Eutermes) mœstus.

Eutermes obscurus. See Termes (Eutermes) obscurus.

Eutermes pristinus. See Termes pristinus.

Eutermes punctatus. See Termes (Eutermes) punctatus.

Eutermes pusillus. See Termes pusillus.

2618. Forbicina ——. (Thysanura.)

Locality: Prussian amber. Horizon: Ligurian.

1845. Berendt. Bernst. befindl. organ. reste vorw., i: 56.

2619. Forbicina ——. (Thysanura.)

Locality: Prussian amber. Horizon: Ligurian.

1856. Menge. Progr. petrischule Danzig, 1856: 11.

2620. Forbicina acuminata. (Thysanura.)

Locality: Prussian amber. Horizon: Ligurian.

1845. Koch-Berendt. Jahrb. mineral., 1845: 872.
1854. " Berendt, Bernst. befindl. organ. reste vorw., i, th. ii: 115–116. *Pl.* 14, *fig.* 121.
See also Machilis acuminatus.

Friganea major. See Phryganea major.

2621. Glessaria ———. (Thysanura.)

Locality: Prussian amber. Horizon: Ligurian.

1845. Berendt. Bernst. befindl. organ. reste vorw., i: 56.

2622. Glessaria rostrata. (Thysanura.)

Locality: Prussian amber. Horizon: Ligurian.

1845. Koch-Berendt. Jahrb. mineral., 1845: 872.
1854. " Berendt, Bernst. befindl. organ. reste vorw., i, th. ii: 117-118. *Pl.* 17, *figs.* 154 *A–F.*
1853–'56. Bronn. Lethæa geogn. 3ᵉ aufl., iii: 649–650. *Pl.* 42^{1a}, *fig.* 15.
1856. Giebel. Insect. d. vorwelt, 328.

2623. Glossosoma ———. (Rhyacophilidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1864. Hagen. Verhandl. zool.-bot. ver. Wien, iv: 230.

2624. Gœra proava. (Sericostomidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1864. Hagen. Phryg. synopsis synom., 16.
1864. " Verhandl. zool.-bot. gesellsch. Wien, xix: 814.

See also Trichostomum proavum.

2625. Gomphoides occulta. (Odonata.)

Locality: Prussian amber. Horizon: Ligurian.

1856. Hagen. Berendt, Bernst. befindl. organ. reste vorw., ii, th. i: 81.

See also Æschna ——— Hagen.

2626. Gomphus ———. (Odonata.)

Locality: Prussian amber. Horizon: Ligurian.

1845. Berendt. Bernst. befindl. organ. reste vorw., i: 57.

2627. Gomphus ——— (larva). (Odonata.)

Locality: Prussian amber. Horizon: Ligurian.

1856. Hagen. Berendt, Bernst. befindl. organ. reste vorw., ii, th. i: 80. *Pl.* 8, *fig.* 12.

2628. Gomphus resinatus. (Odonata.)

Locality: Prussian amber. Horizon: Ligurian.

1848. Hagen. Stett. ent. zeit., ix: 8.
1850. " Rev. Odon. (Mém. soc. roy. sc. Liége, vi): 358.
1852. Giebel. Deutschl. petref., 639.

See also Libellula resinata.

2629. Halesus retusus. (Limnophilidæ.)

Compared with H. nigricornis.

Locality: Prussian amber. Horizon: Ligurian.

1854. Hagen. Verhandl. zool.-bot. ver. Wien, iv: 229 (undescr.) (**Hallesus**).
1856. " Berendt, Bernst. befindl. organ. reste vorw., ii, th. i: 102 (Hallesus).
1864. " Phryg. synopsis synom., 20.
1864. " Verhandl. zool.-bot. gesellsch. Wien, xiv: 818.

Hallesus retusus. See **Halesus retusus.**

2630. Hemerobites antiquus. (Termitina.)

Locality: Prussian amber. Horizon: Ligurian.

1813. Germar. Germ., Mag. entom., i: 16–17.
1832. Burmeister. Handb. ent., i: 637 (Hemerobius) (is a Termes).
1836. " Man. ent., 578–579 (is a Termes).
1866. Hagen. Stett. ent. zeit., xxvii: 407.
1888. Schlechtend. Zeitschr. gesellsch. naturw., lxi: 489–490.

See also Termes antiquus, etc.

2631. Hemerobius ——. (Hemerobina.)

Locality: Prussian amber. Horizon: Ligurian.

1830. Berendt. Insekten im bernstein, 30, 35, 37.

2632. Hemerobius ——. (Hemerobina.)

Locality: Copal. Horizon: Recent.

1776. Bloch. Beschäft. berl. gesellsch. naturf. fr., ii: 173–175. *Pl.* 4, *fig.* 13.

2633. Hemerobius ——. (Hemerobina.)

Locality: Copal. Horizon: Recent.

1776. Bloch. Beschäft. berl. gesellsch. naturf. fr., ii: 186.

2634. Hemerobius ——. (Hemerobina.)

Compared with H. hirtus or H. pulchellus.

Locality: Prussian amber. Horizon: Ligurian.

1832. Burmeister. Handb. ent., i: 637.
1836. " Man. ent., 578.

2635. Hemerobius ——. (Hemerobina.)

Locality: Prussian amber. Horizon: Ligurian.

1835. Gravenhorst. Uebers. schles. gesellsch. vaterl. cult., 1834: 92.

2636. Hemerobius (or Chrysopa) —— (larva). (Hemerobina.)

Locality: Prussian amber. Horizon: Ligurian.

1856. Hagen. Berendt, Bernst. befindl. organ. reste vorw., ii, th. i: 90.

2637. Hemerobius ——. (Hemerobina.)

Locality: Gurnet Bay, Isle of Wight. Horizon: Bembridge Limestone.

1879. Woodward. Quart. journ. geol. soc. Lond., xxxv: 344.
1879. " Geol. mag. (n. s.), v: 89.

Hemerobius antiquus. See Hemerobites antiquus.

2638. Hemerobius mœstus. (Hemerobina.)

Compared with H. pygmæus.

Locality: Prussian amber. Horizon: Ligurian.

1854. Hagen. Verhandl. zool.-bot. ver. Wien, iv: 228 (undescr.).
1856. " Berendt, Bernst. befindl. organ. reste vorw., ii, th. i: 88–89. *Pl.* 8, *fig.* 18.
1866. " Stett. ent. zeit., xxvii: 415.

2639. Hemerobius resinatus. (Hemerobina.)

Locality: Prussian amber. **Horizon**: Ligurian.

1854. **Hagen.** Verhandl. zool.-bot. ver. Wien, iv: 228 (undescr.).
1856. " Berendt, Bernst. befindl. organ. reste vorw., ii, th. i: 88. *Pl.* 7, *figs.* 24*b–d*; *pl.* 8, *fig.* 17.
1866. " Stett. ent. zeit., xxvii: 419.

See also Mucropalpus elegans.

2640. Heterophlebia jucunda. (Odonata.)

Locality: Sieblos, Rhenish Prussia. **Horizon**: Aquitanian.

1858. **Hagen.** Palaeontogr., v: 121–123. *Pl.* 24, *figs.* 1, 2.

2641. Hodotermes ———. (Termitina.)

Locality: Florissant, Colo. **Horizon**: Oligocene.

1881. **Scudder.** Harv. univ. bull., ii: 291.
1881. " Bull. U. S. geol. surv. terr., vi: 294.
1883. " Ann. rep. U. S. geol. surv. terr., xii: 285.

See also Hodotermes coloradensis.

2642. Hodotermes coloradensis. (Termitina.)

Locality: Florissant, Colo. **Horizon**: Oligocene.

1883. **Scudder.** Proc. Amer. acad. arts sc., xix: 142–143.
1890. " Tert. ins. N. A., 113–114. *Pl.* 12, *fig.* 6.

See also Hodotermes ———.

2643. Hodotermes haidingeri. (Termitina.)

Locality: Radoboj, Croatia. **Horizon**: Mayencian.

1858. **Hagen.** Linn. entom., xii: 98–99.
1858. " Catal. Neuropt. Brit. mus., 15.

See also Termes (Termopsis) haidingeri, etc.

2644. Hodotermes heerianus. (Termitina.)

Locality: Schossnitz, Silesia. **Horizon**: Miocene.

1869. **Assmann.** Beitr. ins. vorwelt, 45–47. *Pl.* 1, *figs.* 7, 7*a*.
1869. " Schles. zeitschr. f. ent., (2), i: 45–47. *Pl.* 1, *figs.* 7, 7*a*.

See also Termopsis heeriana, T. heerii.

2645. Hodotermes insignis. (Termitina.)

Locality: Oeningen, Baden. **Horizon**: Tortonian.

1858. **Hagen.** Linn. entom., xii: 100–101.
1858. " Catal. Neuropt. Brit. mus., 15.

See also Termes (Termopsis) insignis, etc.

2646. Hodotermes procerus. (Termitina.)

Locality: Radoboj, Croatia. **Horizon**: Mayencian.

1858. **Hagen.** Linn. entom., xii: 97–98.
1858. " Catal. Neuropt. Brit. mus., 15.

See also Termes pristinus, etc.

2647. Hodotermes spectabilis. (Termitina.)

Locality: Oeningen, Baden. **Horizon**: Tortonian.

1858. **Hagen.** Linn. entom., xii: 99–100.
1858. " Catal. Neuropt. Brit. mus., 15.

See also Termes (Termopsis) spectabilis, etc.

2648. Holcorpa maculosa. (Panorpidæ.)

Locality: Florissant, Colo. Horizon: Oligocene.

1878. Scudder. Bull. U. S. geol. surv. terr., iv: 542.
1883. " Ann. rep. U. S. geol. surv. terr., xii: 283.
1885. " Zittel, Handb. palaeont., i, th. ii, 778. *Fig.* 984.
1886. " Zittel-Barrois, Traité de paléont., ii: 778. *Fig.* 1001.
1890. " Tert. ins. N. A., 174–175. *Pl.* 14, *figs.* 4, 5.

2649. Hydronautia ———. (Sericostomidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1854. Hagen. Verhandl. zool.-bot. ver. Wien, iv: 229.
1856. " Berendt, Bernst. befindl. organ. reste vorw., ii, th. i: 106.

2650. Hydronautia labialis. (Sericostomidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1854. Hagen. Verhandl. zool.-bot. ver. Wein, iv: 229 (undescr.).
1856. " Berendt, Bernst. befindl. organ. reste vorw., ii, th. i: 106. *Pl.* 8, *fig.* 26.

See also Brachycentrus labialis.

2651. Hydropsyche ———. (Hydropsychidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1845. Berendt. Bernst. befindl. organ. reste vorw., i: 57.

2652. Hydropsyche ———. (Hydropsychidæ.)

Compared with H. atomaria.

Locality: Prussian amber. Horizon: Ligurian.

1856. Hagen. Berendt, Bernst. befindl. organ. reste vorw., ii, th. i: 119.

2653. Hydropsyche barbata. (Hydropsychidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1854. Pictet. Traité de paléont., 2e éd., ii: 376 (undescr.).
1856. " Berendt, Bernst. befindl. organ. reste vorw., ii, th. i: 112, 119.

See also Polycentropus barbatus.

2654. Hydropsyche marcens. (Hydropsychidæ.)

Locality: Florissant, Colo. Horizon: Oligocene.

1890. Scudder. Tert. ins. N. A., 180. *Pl.* 15, *fig.* 7.

2655. Hydropsyche operta. (Hydropsychidæ.)

Locality: White River, Colo. Horizon: Oligocene.

1890. Scudder. Tert. ins. N. A., 180. *Pl.* 5, *figs.* 52, 53.

See also Phryganea operta.

2656. Hydropsyche prisca. (Hydropsychidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1854. Pictet. Traité de paléont., 2e éd., ii: 376 (undescr.).
1856. " Berendt, Bernst. befindl. organ. reste vorw., ii, th. i: 116, 119.

See also Polycentropus priscus.

2639. Hemerobius resinatus. (Hemerobina.)

Locality: Prussian amber. **Horizon:** Ligurian.

1854. Hagen. Verhandl. zool.-bot. ver. Wien, iv: 228 (undescr.).
1856. " Berendt, Bernst. befindl. organ. reste vorw., ii, th. i: 88. *Pl.* 7, *figs.* 24*b*–*d*; *pl.* 8, *fig.* 17.
1866. " Stett. ent. zeit., xxvii: 419.
See also Mucropalpus elegans.

2640. Heterophlebia jucunda. (Odonata.)

Locality: Sieblos, Rhenish Prussia. **Horizon:** Aquitanian.

1858. Hagen. Palaeontogr., v: 121–123. *Pl.* 24, *figs.* 1, 2.

2641. Hodotermes ———. (Termitina.)

Locality: Florissant, Colo. **Horizon:** Oligocene.

1881. Scudder. Harv. univ. bull., ii: 291.
1881. " Bull. U. S. geol. surv. terr., vi: 294.
1883. " Ann. rep. U. S. geol. surv. terr., xii: 285.
See also Hodotermes coloradensis.

2642. Hodotermes coloradensis. (Termitina.)

Locality: Florissant, Colo. **Horizon:** Oligocene.

1883. Scudder. Proc. Amer. acad. arts sc., xix: 142–143.
1890. " Tert. ins. N. A., 113–114. *Pl.* 12, *fig.* 6.
See also Hodotermes ———.

2643. Hodotermes haidingeri. (Termitina.)

Locality: Radoboj, Croatia. **Horizon:** Mayencian.

1858. Hagen. Linn. entom., xii: 98–99.
1858. " Catal. Neuropt. Brit. mus., 15.
See also Termes (Termopsis) haidingeri, etc.

2644. Hodotermes heerianus. (Termitina.)

Locality: Schossnitz, Silesia. **Horizon:** Miocene.

1869. Assmann. Beitr. ins. vorwelt, 45–47. *Pl.* 1, *figs.* 7, 7*a*.
1869. " Schles. zeitschr. f. ent., (2), i: 45–47. *Pl.* 1, *figs.* 7, 7*a*.
See also Termopsis heeriana, T. heerii.

2645. Hodotermes insignis. (Termitina.)

Locality: Oeningen, Baden. **Horizon:** Tortonian.

1858. Hagen. Linn. entom., xii: 100–101.
1858. " Catal. Neuropt. Brit. mus., 15.
See also Termes (Termopsis) insignis, etc.

2646. Hodotermes procerus. (Termitina.)

Locality: Radoboj, Croatia. **Horizon:** Mayencian.

1858. Hagen. Linn. entom., xii: 97–98.
1858. " Catal. Neuropt. Brit. mus., 15.
See also Termes pristinus, etc.

2647. Hodotermes spectabilis. (Termitina.)

Locality: Oeningen, Baden. **Horizon:** Tortonian.

1858. Hagen. Linn. entom., xii: 99–100.
1858. " Catal. Neuropt. Brit. mus., 15.
See also Termes (Termopsis) spectabilis, etc.

2648. Holcorpa maculosa. (Panorpidæ.)

Locality: Florissant, Colo. Horizon: Oligocene.

1878. Scudder. Bull. U. S. geol. surv. terr., iv: 542.
1883. " Ann. rep. U. S. geol. surv. terr., xii: 283.
1885. " Zittel, Handb. palaeont., i, th. ii, 778. *Fig.* 984.
1886. " Zittel-Barrois, Traité de paléont., ii: 778. *Fig.* 1001.
1890. " Tert. ins. N. A., 174–175. *Pl.* 14, *figs.* 4, 5.

2649. Hydronautia ———. (Sericostomidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1854. Hagen. Verhandl. zool.-bot. ver. Wien, iv: 229.
1856. " Berendt, Bernst. befindl. organ. reste vorw., ii, th. i: 106.

2650. Hydronautia labialis. (Sericostomidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1854. Hagen. Verhandl. zool.-bot. ver. Wein, iv: 229 (undescr.).
1856. " Berendt, Bernst. befindl. organ. reste vorw., ii, th. i: 106. *Pl.* 8, *fig.* 26.
See also Brachycentrus labialis.

2651. Hydropsyche ———. (Hydropsychidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1845. Berendt. Bernst. befindl. organ. reste vorw., i: 57.

2652. Hydropsyche ———. (Hydropsychidæ.)

Compared with H. atomaria.

Locality: Prussian amber. Horizon: Ligurian.

1856. Hagen. Berendt, Bernst. befindl. organ. reste vorw., ii, th. i: 119.

2653. Hydropsyche barbata. (Hydropsychidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1854. Pictet. Traité de paléont., 2e éd., ii: 376 (undescr.).
1856. " Berendt, Bernst. befindl. organ. reste vorw., ii, th. i: 112, 119.
See also Polycentropus barbatus.

2654. Hydropsyche marcens. (Hydropsychidæ.)

Locality: Florissant, Colo. Horizon: Oligocene.
1890. Scudder. Tert. ins. N. A., 180. *Pl.* 15, *fig.* 7.

2655. Hydropsyche operta. (Hydropsychidæ.)

Locality: White River, Colo. Horizon: Oligocene.
1890. Scudder. Tert. ins. N. A., 180. *Pl.* 5, *figs.* 52, 53.
See also Phryganea operta.

2656. Hydropsyche prisca. (Hydropsychidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1854. Pictet. Traité de paléont., 2e éd., ii: 376 (undescr.).
1856. " Berendt, Bernst. befindl. organ. reste vorw., ii, th. i: 116, 119.
See also Polycentropus priscus.

2657. Hydropsyche submaculata. (Hydropsychidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1851. Kolenati. Abhandl. böhm. gesellsch. wiss., (5), vi: 15 (undescr.).

2658. Hydropsyche subvariabilis. (Hydropsychidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1851. Kolenati. Abhandl. böhm. gesellsch. wiss., (5), vi: 15 (undescr.).

2659. Hydropsyche xanthocoma. (Hydropsychidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1864. Kollar. Hagen, Phryg. synopsis synom., 26.
1864. " Hagen, Verhandl. zool.-bot. gesellsch. Wien, xiv: 824.
See also Phryganeolitha vetusta, etc.

2660. Hydroptila ——. (Hydroptilidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1854. Hagen. Verhandl. zool.-bot. ver. Wien, iv: 229.
1856. " Berendt, Bernst. befindl. organ. reste vorw., ii, th. i: 10 (undescr.).

2661. Hydrorchestria succinica. (Hydroptilidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1854. Hagen. Verhandl. zool.-bot. ver. Wien, iv: 229 (undescr.).
1856. " Berendt, Bernst. befindl. organ. reste vorw., ii, th. i: 107–106.
See also Agraylea succinica.

2662. Ictinus fur. (Odonata.)

Locality: Rott, Rhenish Prussia. Horizon: Aquitanian.

1863. Hagen. Palaeontogr., x: 258–260. *Pl.* 43, *fig.* 9.

2663. Indusia calculosa. (Limnophilidæ.)

Locality: Horse Creek, Wyo. Horizon: Upper Green River Group.

1878. Scudder. Bull. U. S. geol. surv. terr., iv: 542–543.
1879. " Ann. rep. U. S. geol. surv. terr., xi: 528, 638–639.
1885. " Zittel, Handb. palaeont., i, th. ii: 778. *Fig.* 985.
1886. " Zittel-Barrois, Traité de paléont., ii: 778. *Fig.* 1002.
1890. " Tert. ins. N. A., 194–195. *Pl.* 4, *fig.* 4.

2664. Indusia tubulata. (Limnophilidæ ?.)

Locality: Auvergne, France. Horizon: Aquitanian.

1810. Brongniart. Ann. mus. hist. nat., xv: 392–393.
1822. Defrance. Dict. sc. nat., xxiii: 411–412.
1833. Croizet. Bull. soc. géol. Fr., iv: 25.
1833. St. Hilaire. Rev. encycl., lix: 77–78.
1838. Bronn. Lethæa geogn., ii: 1160–1161. *Pl.* 36, *fig.* 15.
1842. Viquesnel. Bull. soc. géol. Fr., xiv: 149.
1843. Burmeister. Geschichte d. schöpfung, 446.
1848. Bronn. Index palaeont., nomencl., 609.
1849. " Index palaeont., enumerat., 612.
1853–'56. Bronn. Lethæa geogn., 3e aufl., iii: 615. *Pl.* 36, *fig.* 15.
1856. Giebel. Insect. d. vorwelt, 269.
See also Phryganea coreutiana, P. goraudiana, P. gigantea, Ind. tubulosa.

2665. Indusia tubulosa. (Limnophilidæ ?.)

Locality: Auvergne, France. Horizon: Aquitanian.

An XIII. Bosc. Journ. d. mines, xvii: 397–400. *Pl.* 7, *figs.* *C–E.*
1825. Guérin. Dict. class. d'hist. nat., viii: 581.
1827. Scrope. Geol. centr. France (without name).
1829. Serres. Géogn. terr. tert., 208.
1840. Meyer. Ersch u. Gruber, Encycl. wiss., sect. 2, th. xviii: 136 (no name).
1846. Pictet. Traité élém. paléont., iv: 108 (no name).
1854. " Traité de paléont., 2^e éd., ii: 375–376 (no name).
1858. Scrope. Geol. centr. France, 2^d ed., 10–13 (without name).
1864. Hagen. Phryg. synopsis synom., 28.
1864. " Verhandl. zool.-bot. gesellsch. Wien, xiv: 826.
1865. Lyell. Elem. geol., 6th ed., 223–225 (no name). *Fig.* 168.
1885. Scudder. Zittel, Handb. palaeont., i, th. ii: 778.
1886. " Zittel-Barrois, Traité de paléont., ii: 778.
See also Indusia tubulata, etc.

2666. Inocellia ——— (4 sp.). (Sialina.)

Locality: Florissant, Colo. Horizon: Oligocene.

1882. Scudder. Proc. Bost. soc. nat. hist., xxi: 407.
1883. " Ann. rep. U. S. geol. surv. terr., xii: 283.
See also the following species.

Inocellia erigena. See Raphidia (Inocellia) erigena.

2667. Inocellia eventa. (Sialina.)

Locality: Florissant, Colo. Horizon: Oligocene.

1890. Scudder. Tert. ins. N. A., 160–161.
See also Inocellia ———.

2668. Inocellia somnolenta. (Sialina.)

Locality: Florissant, Colo. Horizon: Oligocene.

1890. Scudder. Tert. ins. N. A., 157–158. *Pl.* 14, *fig.* 12.
See also Inocellia ———.

2669. Inocellia tumulata. (Sialina.)

Locality: Florissant, Colo. Horizon: Oligocene.

1890. Scudder. Tert. ins. N. A., 158–159. *Pl.* 14, *fig.* 15.
See also Inocellia ———.

2670. Inocellia veterana. (Sialina.)

Locality: Florissant, Colo. Horizon: Oligocene.

1890. Scudder. Tert. ins. N. A., 156–157. *Pl.* 14, *fig.* 1.
See also Inocellia ———.

Kalotermes ———. See Calotermes ———.

2671. Lampropholis ——— (2 sp.). (Thysanura.)

Locality: Prussian amber. Horizon: Ligurian.

1856. Menge. Progr. petrischule Danzig, 1856: 11.

2672. Lampropholis argentata. (Thysanura.)

Locality: Prussian amber. Horizon: Ligurian.

1854. Menge. Koch-Ber., Bernst. befindl. organ. reste vorw., i, th. ii: 117.
See also Lepisma mengei.

2673. Lepidion ——. (Thysanura.)

Locality: Prussian amber. Horizon: Ligurian.

1856. Menge. Progr. petrischule Danzig, 1856: 11.

2674. Lepidion pisciculus. (Thysanura.)

Locality: Prussian amber. Horizon: Ligurian.

1854. Menge. Koch-Ber., Bernst. befindl. organ. reste vorw., i, th. ii: 117.
See also Lepisma pisciculus.

2675. Lepidotrix —— (2 sp.). (Thysanura.)

Locality: Prussian amber. Horizon: Ligurian.

1856. Menge. Progr. petrischule Danzig, 11.

2676. Lepidotrix piliferum. (Thysanura.)

Locality: Prussian amber. Horizon: Ligurian.

1854. Menge. Koch-Ber., Bernst. befindl. organ. reste vorw., i, th. ii: 117.
See also Lepisma pilifera.

2677. Lepisma ——. (Thysanura.)

Locality: Prussian amber. Horizon: Ligurian.

1845. Berendt. Bernst. befindl. organ. reste vorw., i: 56.

2678. Lepisma ——. (Thysanura.)

Locality: Prussian amber. Horizon: Ligurian.

1820. Schlotheim. Petrefactenk., 43.

2679. Lepisma ——. (Thysanura.)

Locality: Florissant, Colo. Horizon: Oligocene.

1881. Scudder. Bull. U. S. geol. surv. terr., vi: 294.
1883. " Ann. rep. U. S. geol. surv. terr., xii: 284.
See also Lepisma platymera.

2680. Lepisma argentata. (Thysanura.)

Locality: Prussian amber. Horizon: Ligurian.

1845. Koch-Berendt. Jahrb. mineral., 1845: 872.
1854. " Berendt, Bernst. befindl. organ. reste vorw., i, th. ii: 117. *Pl.* 14, *fig.* 123.
1856. Giebel. Insect. d. vorwelt, 327.

2681. Lepisma dubia. (Thysanura.)

Compared with L. saccharina.

Locality: Prussian amber. Horizon: Ligurian.

1845. Koch-Berendt. Jahrb. mineral., 1845: 872.
1854. " Berendt, Bernst. befindl. organ. reste vorw., i, th. ii: 116. *Pl.* 14, *fig.* 122.
1856. Giebel. Insect. d. vorwelt, 327.

2682. Lepisma mengei. (Thysanura.)

Locality: Prussian amber. Horizon: Ligurian.

1856. Giebel. Insect. d. vorwelt, 327.
See also Lamprophołis argentata.

2683. Lepisma pilifera. (Thysanura.)

Locality: Prussian amber. Horizon: Ligurian.

1856. Giebel. Insect. d. vorwelt, 327–328.
See also Lepidotrix piliferum.

2684. Lepisma pisciculus. (Thysanura.)

Locality: Prussian amber. Horizon: Ligurian.

1856. Giebel. Insect. d. vorwelt, 327.
See also Lepidion pisciculus.

2685. Lepisma platymera. (Thysanura.)

Locality: Florissant, Colo. Horizon: Oligocene.

1890. Scudder. Tert. ins. N. A., 102–103. *Pl.* 12, *fig.* 18.
See also Lepisma —— Scudder.

2686. Leptobrochus luteus. (Hydropsychidæ.)

Locality: Florissant, Colo. Horizon: Oligocene.

1890. Scudder. Tert. ins. N. A., 187–188. *Pl.* 15, *figs.* 1, 3.

2687. Leptophlebia prisca. (Ephemeridæ.)

Locality: Prussian amber. Horizon: Ligurian.

1871. Eaton. Monogr. Ephemeridæ, 87.
See also Potamanthus priscus.

2688. Lestes coloratus. (Odonata.)

Locality: Radoboj, Croatia. Horizon: Mayencian.

1841. Charpentier. Neues jahrb. mineral., 1841: 332–337 (no name). *Pl.* 1.
1848. Hagen. Stett. ent. zeit., ix: 7–8.
1850. " Rev. Odon. (Mém. soc. roy. sc. Liége, vi): 357.
1852. Giebel. Deutschl. petref., 638.
See also Agrion coloratum.

2689. Lestes iris. (Odonata.)

Locality: Oeningen, Baden. Horizon: Tortonian.

1890. Scudder. Tert. ins. N. A., 127
See also Agrion iris.

2690. Lestes leucosia. (Odonata.)

Locality: Oeningen, Baden. Horizon: Tortonian.

1850. Hagen. Rev. Odon. (Mém. soc. roy. sc. Liége, vi): 357.
1852. Giebel. Deutschl. petref., 638.
1890. Scudder. Tert. ins. N. A., 127.
See also Agrion leucosia, etc.

2691. Lestes ligea. (Odonata.)

Locality: Oeningen, Baden. Horizon: Tortonian.

1850. Hagen. Rev. Odon. (Mém. soc. roy. sc. Liége, vi): 357.
1852. Giebel. Deutsch. petref., 638.
1890. Scudder. Tert. ins. N. A., 126–127.

See also Agrion ligea.

2692. Lestes peisinoe. (Odonata.)

Locality: Oeningen, Baden. Horizon: Tortonian.

1850. Hagen. Rev. Odon. (Mém. soc. roy. sc. Liége, vi): 357.
1852. Giebel. Deutschl. petref., 638.
1890. Scudder. Tert. ins. N. A., 127.

See also Agrion peisinoe.

2693. Lestes vicina. (Odonata.)

Locality: Sieblos, Rhenish Prussia. Horizon: Aquitanian.

1858. Hagen. Palaeontogr., v: 123–124. *Pl.* 24, *figs.* 3, 4.

2694. Leuctra ———. (Perlina.)

Locality: Prussian amber. Horizon: Ligurian.

1845. Berendt. Bernst. befindl. organ. reste vorw., i: 57.

2695. Leuctra antiqua. (Perlina.)

Compared with L. cylindrica.

Locality: Rott, Rhenish Prussia. Horizon: Aquitanian.

1863. Hagen. Palaeontogr., x: 251–253. *Pl.* 44, *figs.* 3, 4.

2696. Leuctra fusca. (Perlina.)

Locality: Prussian amber. Horizon: Ligurian.

1854. Pictet. Hagen, Verhandl. zool.-bot. ver. Wien, iv: 226 (undescr.).
1856. " Berendt, Bernst. befindl. organ. reste vorw., ii, th. i: 70. *Pl.* 6, *figs.* 10*b–d*.

See also Nemura (Leuctra) fusca.

2697. Leuctra gracilis. (Perlina.)

Compared with L. cylindrica, etc.

Locality: Prussian amber. Horizon: Ligurian.

1854. Pictet. Hagen, Verhandl. zool.-bot. ver. Wien, iv: 226 (undescr.).
1856. " Berendt, Bernst. befindl. organ. reste vorw., ii, th. i: 69. *Pl.* 6, *figs.* 9*b–f*; *pl.* 8, *fig.* 2.

See also Nemura (Leuctra) gracilis.

2698. Leuctra linearis. (Perlina.)

Locality: Prussian amber. Horizon: Ligurian.

1854. Hagen. Verhandl. zool.-bot. ver. Wien, iv: 226 (undescr.).
1856. " Berendt, Bernst. befindl. organ. reste vorw., ii, th. i: 69–70. *Pl.* 8, *fig.* 3.

2699. Leuctra minuscula. (Perlina.)

Locality: Prussian amber. Horizon: Ligurian.

1854. Hagen. Verhandl. zool.-bot. ver. Wien, iv: 226 (undescr.).
1856. " Berendt, Bernst. befindl. organ. reste vorw., ii, th. i: 71.

Libella ———. See Libellula ——— Scheuchzer.

2700. Libellula ———. (Odonata.)

Locality: Prussian amber. Horizon: Ligurian.

1830. Berendt. Insekten im bernstein, 35.

2701. Libellula ——— (larva). (Odonata.)

Localities: Porcarecca, Pane e vino, Limone, etc., Italy. Horizon: Tortonian.

1875. Capellini. Rend. sess. accad. sc. ist. Bologna, 1874–'75; 24, 133.
1880. " Atti accad. linc., (3), mem. sc. fis., v: 379, 383–385.

2702. Libellula ———. (Odonata.)

Locality: Gabbro, Italy. Horizon: Tripoli.

1878. Capellini. Atti accad. linc., (3), mem. sc. fis., ii: 285.

2703. Libellula ——— (larva). (Odonata.)

Locality: Oeningen, Baden. Horizon: Tortonian.

1723. Scheuchzer. Herb. diluv., ed. nov., 21 (Libella). *Pl.* 5, *fig.* 1.
See also Libellula eurynome, ——— eurynome (Odonata-Libellulina).

2704. Libellula ———. (Odonata.)

Locality: Monte Bolca, Italy. Horizon: Ligurian.

1723. Scheuchzer. Herb. diluv., ed. nov., 21 (Libella). *Pl.* 5, *fig.* 2.

2705. Libellula ———. (Odonata.)

Locality: Green River, Wyo. Horizon: Oligocene.

1890. Scudder. Tert. ins. N. A., 146. *Pl.* 6, *figs.* 4, 16.
See also ——— ——— (Odonata-Libellulina).

2706. Libellula ——— (Odonata.)

Compared with Æschna grandis.

Locality: Aix, France. Horizon: Ligurian.

1829. Serres. Géogn. terr. tert., 228.

2707. Libellula ——— (larva). (Odonata.)

Compared with L. eurynome, Oeningen.

Locality: Montescano presso Stradella, Italy. Horizon: Marne gessifere.

1882. Sordelli. Alc. ins. foss. Lomb., 3–4.
1882. " Bull. soc. ent. ital., xiv: 226–227.

2708. Libellula ——— (larva). (Odonata.)

Compared with L. doris, Oeningen.

Locality: Montescano presso Stradella, Italy. Horizon: Marne gessifere.

1882. Sordelli. Alc. inc. foss. Lomb., 4.
1882. " Bull. soc. ent. ital., xiv: 227.

2709. Libellula ———. (Odonata.)

Locality: Gurnet Bay, Isle of Wight. Horizon: Bembridge Limestone.

1879. Woodward. Quart. journ. geol. soc. Lond., xxxv: 344.
1879. " Geol. mag. (n. s.), v: 89.

2691. Lestes ligea. (Odonata.)

Locality: Oeningen, Baden. Horizon: Tortonian.

1850. Hagen. Rev. Odon. (Mém. soc. roy. sc. Liége, vi): 357.
1852. Giebel. Deutsch. petref., 638.
1890. Scudder. Tert. ins. N. A., 126–127.
See also Agrion ligea.

2692. Lestes peisinoe. (Odonata.)

Locality: Oeningen, Baden. Horizon: Tortonian.

1850. Hagen. Rev. Odon. (Mém. soc. roy. sc. Liége, vi): 357.
1852. Giebel. Deutschl. petref., 638.
1890. Scudder. Tert. ins. N. A., 127.
See also Agrion peisinoe.

2693. Lestes vicina. (Odonata.)

Locality: Sieblos, Rhenish Prussia. Horizon: Aquitanian.

1858. Hagen. Palaeontogr., v: 123–124. *Pl.* 24, *figs.* 3, 4.

2694. Leuctra ——. (Perlina.)

Locality: Prussian amber. Horizon: Ligurian.

1845. Berendt. Bernst. befindl. organ. reste vorw., i: 57.

2695. Leuctra antiqua. (Perlina.)

Compared with L. cylindrica.

Locality: Rott, Rhenish Prussia. Horizon: Aquitanian.

1863. Hagen. Palaeontogr., x: 251–253. *Pl.* 44, *figs.* 3, 4.

2696. Leuctra fusca. (Perlina.)

Locality: Prussian amber. Horizon: Ligurian.

1854. Pictet. Hagen, Verhandl. zool.-bot. ver. Wien, iv: 226 (undescr.).
1856. " Berendt, Bernst. befindl. organ. reste vorw., ii, th. i: 70. *Pl.* 6, *figs.* 10*b–d*.
See also Nemura (Leuctra) fusca.

2697. Leuctra gracilis. (Perlina.)

Compared with L. cylindrica, etc.

Locality: Prussian amber. Horizon: Ligurian.

1854. Pictet. Hagen, Verhandl. zool.-bot. ver. Wien, iv: 226 (undescr.).
1856. " Berendt, Bernst. befindl. organ. reste vorw., ii, th. i: 69. *Pl.* 6, *figs.* 9*b–f*; *pl.* 8, *fig.* 2.
See also Nemura (Leuctra) gracilis.

2698. Leuctra linearis. (Perlina.)

Locality: Prussian amber. Horizon: Ligurian.

1854. Hagen. Verhandl. zool.-bot. ver. Wien, iv: 226 (undescr.).
1856. " Berendt, Bernst. befindl. organ. reste vorw., ii, th. i: 69–70. *Pl.* 8, *fig.* 3.

2699. Leuctra minuscula. (Perlina.)

Locality: Prussian amber. Horizon: Ligurian.

1854. Hagen. Verhandl. zool.-bot. ver. Wien, iv: 226 (undescr.).
1856. " Berendt, Bernst. befindl. organ. reste vorw., ii, th. i: 71.

Libella ——. See Libellula —— Scheuchzer.

2700. Libellula ——. (Odonata.)

Locality: Prussian amber. Horizon: Ligurian.

1830. Berendt. Insekten im bernstein, 35.

2701. Libellula —— (larva). (Odonata.)

Localities: Porcarecca, Pane e vino, Limone, etc., Italy. Horizon: Tortonian.

1875. Capellini. Rend. sess. accad. sc. ist. Bologna, 1874–'75; 24, 133.
1880. " Atti accad. linc., (3), mem. sc. fis., v: 379, 383–385.

2702. Libellula ——. (Odonata.)

Locality: Gabbro, Italy. Horizon: Tripoli.

1878. Capellini. Atti accad. linc., (3), mem. sc. fis., ii: 285.

2703. Libellula —— (larva). (Odonata.)

Locality: Oeningen, Baden. Horizon: Tortonian.

1723. Scheuchzer. Herb. diluv., ed. nov., 21 (Libella). *Pl.* 5, *fig.* 1.
See also Libellula eurynome, —— eurynome (Odonata-Libellulina).

2704. Libellula ——. (Odonata.)

Locality: Monte Bolca, Italy. Horizon: Ligurian.

1723. Scheuchzer. Herb. diluv., ed. nov., 21 (Libella). *Pl.* 5, *fig.* 2.

2705. Libellula ——. (Odonata.)

Locality: Green River, Wyo. Horizon: Oligocene.

1890. Scudder. Tert. ins. N. A., 146. *Pl.* 6, *figs.* 4, 16.
See also —— —— (Odonata-Libellulina).

2706. Libellula —— (Odonata.)

Compared with Æschna grandis.

Locality: Aix, France. Horizon: Ligurian.

1829. Serres. Géogn. terr. tert., 228.

2707. Libellula —— (larva). (Odonata.)

Compared with L. eurynome, Oeningen.

Locality: Montescano presso Stradella, Italy. Horizon: Marne gessifere.

1882. Sordelli. Alc. ins. foss. Lomb., 3–4.
1882. " Bull. soc. ent. ital., xiv: 226–227.

2708. Libellula —— (larva). (Odonata.)

Compared with L. doris, Oeningen.

Locality: Montescano presso Stradella, Italy. Horizon: Marne gessifere.

1882. Sordelli. Alc. inc. foss. Lomb., 4.
1882. " Bull. soc. ent. ital., xiv: 227.

2709. Libellula ——. (Odonata.)

Locality: Gurnet Bay, Isle of Wight. Horizon: Bembridge Limestone.

1879. Woodward. Quart. journ. geol. soc. Lond., xxxv: 344.
1879. " Geol. mag. (n. s.), v: 89.

2710. Libellula aglaia. (Odonata.)

Locality: Aix, France. Horizon: Ligurian.

1861.	Heer.	Saporta, Heer, Rech. climat pays tert., 153 (undescr.).

2711. Libellula calypso (pupa). (Odonata.)

Locality: Oeningen, Baden. Horizon: Tortonian.

1849.	Heer.	Insektenf. tertiärg. Oeningen, ii: 87. *Pl.* 5, *fig.* 9; *pl.* 6, *fig.* 7.
1850.	Hagen.	Rev. Odon. (Mém. soc. roy. sc. Liége, vi): 364.
1852.	Giebel.	Deutschl. petref., 639.
1854.	Pictet.	Traité de paléont., 2ᵉ éd., ii: 374. *Pl.* 40, *fig.* 19.
1856.	Giebel.	Insect. d. vorwelt, 284.
1865.	Heer.	Urwelt der Schweiz, 368. *Fig.* 232 on *p.* 366.
1872.	"	Monde prim. Suisse, 452. *Fig.* 232 on *p.* 449.
1876.	"	Prim. world Switz., ii: 23. *Fig.* 232 on *p.* 21.
1879.	"	Urwelt der Schweiz, 2ᵉ aufl., 394. *Fig.* 273 on *p.* 392.

2712. Libellula cassandra (pupa). (Odonata.)

Locality: Rott, Rhenish Prussia. Horizon: Aquitanian.

1863.	Hagen.	Palaeontogr., x: 264-267. *Pl.* 45, *figs.* 1-4.
1870.	L. Heyden.	Foss. Dipt. Rott, 30.
1870.	"	Palaeontogr., xvii: 266.

See also ——— cassandra (Odonata-Libellulina).

2713. Libellula cellulosa. (Odonata.)

Compared with L. eponina.

Locality: Rott, Rhenish Prussia. Horizon: Aquitanian.

1863.	Hagen.	Palaeontogr., x: 253-258. *Pl.* 43, *figs.* 1-8.
1870.	L. Heyden.	Foss. Dipt. Rott, 29.
1870.	"	Palaeontogr., xvii: 265.

See also Celithemis cellulosa, Libellula ceres, etc.

2714. Libellula ceres (pupa). (Odonata.)

Locality: Rott, Rhenish Prussia. Horizon: Aquitanian.

1863.	Hagen.	Palaeontogr., x: 260-264. *Pl.* 44, *figs.* 9-11; *pl.* 45, *figs.* 5-12.
1870.	L. Heyden.	Foss. Dipt. Rott, 30.
1870.	"	Palaeontogr., xvii: 266.

See also ——— ceres (Odonata-Libellulina), Libellula cellulosa, Celithemis cellulosa.

Libellula dorii. See Libellula doris.

2715. Libellula doris (larva, pupa). (Odonata.)

Compared with L. depressa L.

Localities: Limone, near Lavorno, Sogliano, Perticara, Monte Donato nel Bolognese, Ancona, Guarène, Sinigallia, Italy; Girgenti, Sicily; Grasseth, Bohemia; Oeningen, Baden. Horizon: Tortonian, Helvetian.

1849.	Heer.	Insektenf. tertiärg. Oeningen, ii: 81-83. *Pl.* 5, *fig.* 5; *pl.* 6, *fig.* 4.
1850.	Hagen.	Rev. Odon. (Mém. soc. roy. sc. Liége, vi): 363-364.
1852.	Giebel.	Deutschl. petref., 639.
1856.	"	Insect. d. vorwelt, 282-283.
1856.	Massalongo.	Stud. paleont., 23. *Pl.* 1, *figs.* 12, 13.
1857.	Jokély.	Jahrb. geol. reichsanst., viii: 502 (dorii).

1859.	Scarabelli.	Massal.-Scarab., Stud. flora foss. Senig., 25.
1865.	Sismonda.	Mem. accad. sc. Torino, (2), xxii: 470. *Pl.* 17, *fig.* 6.
1865.	Heer.	Urwelt der Schweiz, 368. *Fig.* 231 on *p.* 366.
1872.	"	Monde prim. Suisse, 452. *Fig.* 231 on *p.* 449.
1873.	Capellini.	Mem. accad. sc. ist. Bologna, (3), iv: 539, 557.
1875.	Heyden.	Stoehr, Bull. com. geol. ital., 1875: 286.
1876.	Heer.	Prim. world Switz., ii: 23. *Fig.* 231 on *p.* 21.
1879.	"	Urwelt der Schweiz, 2^{e} aufl., 394. *Fig.* 272 on *p.* 392.
1880.	Bosniaski.	Atti soc. tosc. sc. nat., 1880: 93.
1882.	Sordelli.	Alc. ins. foss. Lomb., 5, note 3.
1882.	"	Bull. soc. ent. ital., xiv: 228, note 3.

See also ——— doris (Odonata-Libellulina).

2716. **Libellula eurynome** (larva, pupa). (Odonata.)

Compared with L. depressa L.

Localities: Sinigallia, Italy; Girgenti, Sicily; Oeningen, Baden. **Horizon:** Tortonian, Helvetian.

1849.	Heer.	Insektenf. tertiärg. Oeningen, ii: 85–86. *Pl.* 5, *fig.* 7.
1850.	Hagen.	Rev. Odon. (Mém. soc. roy. sc. Liége, vi): 364.
1852.	Giebel.	Deutschl. petref., 639.
1856.	"	Insect. d. vorwelt, 283.
1856.	Massalongo.	Stud. paleont., 23. *Pl.* 1, *figs.* 8–11.
1859.	Scarabelli.	Massal.-Scarab., Stud. flora foss. Senig., 25.
1865.	Heer.	Urwelt der Schweiz, 368.
1872.	"	Monde prim. Suisse, 452
1875.	Heyden.	Stoehr, Bull. com. geol. ital., 1875: 286.
1876.	Heer.	Prim. world Switz., ii: 23.
1879.	"	Urwelt der Schweiz, 2^{e} aufl., 394.

See also ——— eurynome (Odonata-Libellulina), Libellula ——— Scheuchzer.

2717. **Libellula kieseli.** (Odonata.)

Locality: Schossnitz, Silesia. **Horizon:** Miocene.

1869.	Assmann.	Beitr. ins. vorwelt, 52–56. *Pl.* 1, *figs.* 10, 10*a*.
1869.	"	Schles. zeitschr. f. ent., (2), i: 52–56. *Pl.* 1, *figs.* 10, 10*a*.

2718. **Libellula melobasis** (pupa). (Odonata.)

Locality: Oeningen, Baden. **Horizon:** Tortonian.

1849.	Heer.	Insektenf. tertiärg. Oeningen, ii: 86–87. *Pl.* 5, *fig.* 8; *pl.* 6, *fig.* 6.
1850.	Hagen.	Rev. Odon (Mém. soc. roy. sc. Liége, vi): 364.
1852.	Giebel.	Deutschl. petref., 639.
1856.	"	Insect. d. vorwelt, 283.

See also ——— melobasis (Odonata-Libellulina).

2719. **Libellula minuscula.** (Odonata.)

Locality: Corent, France. **Horizon:** Aquitanian.

1870.	Oustalet.	Ann. sc. geol., ii, art. 3: 88. *Pl.* 2, *fig.* 6.

2720. **Libellula œningensis** (larva). (Odonata.)

Locality: Oeningen, Baden. **Horizon:** Tortonian.

1825.	König.	Icon. foss. sectiles, 2. *Pl.* 2, *fig.* 17.

2721. **Libellula œningensis.** (Odonata.)

Locality: Oeningen, Baden. **Horizon:** Tortonian.

1852.	Quenstedt.	Handb. petref., 317. *Pl.* 24, *fig.* 8.

2722. Libellula pannewitziana. (Odonata.)

Locality: Schossnitz, Silesia. **Horizon**: Miocene.

1855. Göppert. Tert. flora Schossnitz, vii. *Pl.* 26, *fig.* 55.
1869. Assmann. Beitr. ins. vorwelt (Schles. zeitschr. f. ent., (2), i): 56–57. *Pl.* 1, *fig.* 11.

2723. Libellula perse (pupa). (Odonata).

Localities: Oeningen ?, Baden; Aix, France. **Horizon**: Tortonian, ? Ligurian.

1849. Heer. Insektenf. tertiärg. Oeningen, ii: 80–81. *Pl.* 5, *fig.* 4; *pl.* 6, *fig.* 3.
1850. Hagen. Rev. Odon. (Mém. soc. roy. sc. Liége, vi): 363.
1852. Giebel. Deutschl. petref., 639.
1856. " Insect. d. vorwelt, 282.
1856. Heer. Viert. naturf. gesellsch. Zürich, i: 28.
See also ——— perse (Odonata-Libellulina).

2724. Libellula platyptera. (Odonata.)

Locality: Radoboj, Croatia. **Horizon**: Mayencian.

1843. Charpentier. Verhandl. leop.-carol. akad. naturf., xx: 408 (platyptra). *Pl.* 22, *fig.* 3.
1848. Hagen. Stett. ent. zeit., ix: 12.
See also Cordulia platyptera.

Libellula platyptra. See Libellula platyptera.

2725. Libellula resinata. (Odonata.)

Locality: Prussian amber. **Horizon**: Ligurian.

1856. Giebel. Insect. d. vorwelt, 284 (resinatus).
See also Gomphus resinatus.

2726. Libellula sieboldiana. (Odonata.)

Locality: Schossnitz, Silesia. **Horizon**: Miocene.

1855. Göppert. Tert. flora Schossnitz, vii. *Pl.* 26, *fig.* 54.
1869. Assmann. Beitr. ins. vorwelt (Schles. zeitschr. f. ent., (2), i): 48–52. *Pl.* 1, *figs.* 9, 9*a*.

2727. Libellula thetis (pupa). (Odonata.)

Locality: Oeningen, Baden. **Horizon**: Tortonian.

1849. Heer. Insektenf. tertiärg. Oeningen, ii: 83–85. *Pl.* 5, *fig.* 6; *pl.* 6, *fig.* 5.
1850. Hagen. Rev. Odon. (Mém. soc. roy. sc. Liége, vi): 364.
1852. Giebel. Deutschl. petref., 639.
1856. " Insect. d. vorwelt, 283.
See also ——— thetis (Odonata-Libellulina).

2728. Libellula thoe (pupa). (Odonata.)

Locality: Oeningen, Baden. **Horizon**: Tortonian.

[1755. Knorr. Samml. v. merkwürd., 1 (unnamed). *Pl.* 33, *figs.* 3–4.]
1849. Heer. Insektenf. tetiärg. Oeningen, ii: 79–80. *Pl.* 6, *fig.* 2.
1850. Hagen. Rev. Odon. (Mém. soc. roy. sc. Liége, vi): 363.
1852. Giebel. Deutschl. petref., 639.
1856. " Insect. d. vorwelt, 282.
See also ——— thoe (Odonata-Libellulina).

Limnephilus dubius. See Limnophilus dubius.

Limnephilus piceus. See Limnophilus piceus.

2729. Limnophilus ——. (Limnophilidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1845. Berendt. Bernst. befindl. organ. reste vorw., i: 57.

2730. Limnophilus —— (2 sp.). (Limnophilidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1854. Hagen. Verhandl. zool.-bot. ver. Wien, iv: 229 (undescr.).

1856. " Berendt, Bernst. befindl. organ. reste vorw., ii, th. i: 101 (undescr.).

See also Agrypnia ——.

2731. Limnophilus dubius. (Limnophilidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1854. Pictet. Traité de paléont., 2e éd., ii: 376 (undescr.) (Limnephilus).

1856. " Berendt, Bernst. befindl. organ. reste vorw., ii, th. i: 100–101 (Limnephilus).

See also Phryganea dubia.

2732. Limnophilus piceus. (Limnophilidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1854. Pictet. Traité de paléont., 2e éd., ii: 376 (undescr.) (Limnephilus).

1856. " Berendt, Bernst. befindl. organ. reste vorw., ii, th. i: 99 (Limnephilus).

See also Phryganea picea, Neuronia picea.

2733. Limnophilus soporatus. (Limnophilidæ.)

Locality: Florissant, Colo. Horizon: Oligocene.

1890. Scudder. Tert. ins. N. A., 193. *Pl.* 15, *fig.* 5.

2734. Limnopsyche dispersa. (Phryganidæ.)

Locality: Florissant, Colo. Horizon: Oligocene.

1890. Scudder. Tert. ins. N. A., 199–200. *Pl.* 13, *fig.* 2.

2735. Lithagrion ——. (Odonata.)

Locality: Florissant, Colo. Horizon: Oligocene.

881. Scudder. Bull. U. S. geol. surv. terr., vi: 293.

1882. " Proc. Bost. soc. nat. hist., xxi: 409 (2 sp.).

1883. " Ann. rep. U. S. geol. surv. terr., xii: 284.

See also Lithagrion hyalinum, L. umbratum.

2736. Lithagrion hyalinum. (Odonata.)

Locality: Florissant, Colo. Horizon: Oligocene.

1890. Scudder. Tert. ins. N. A., 135–136. *Pl.* 13, *fig.* 4.

See also Lithagrion ——.

2737. Lithagrion umbratum. (Odonata.)

Locality: Florissant, Colo. Horizon: Oligocene.

1890. Scudder. Tert. ins. N. A., 136–137. *Pl.* 13, *figs.* 12, 14.

See also Lithagrion ——.

2738. Litobrochus externatus. (Hydropsychidæ.)

Locality: Florissant, Colo. Horizon: Oligocene.

1890. Scudder. Tert. ins. N. A., 186-187. *Pl.* 15, *fig.* 10.

2739. Machilis ——. (Thysanura.)

Locality: Prussian amber. Horizon: Ligurian.

1835. Gravenhorst. Uebers. schles. gesellsch. vaterl. cult., 1834: 93.

2740. Machilis (Forbicina) acuminatus. (Thysanura.)

Locality: Prussian amber. Horizon: Ligurian.

1856. Giebel. Insect. d. vorwelt, 326.
See also Forbicina acuminata.

2741. Machilis (Petrobius) albomaculatus. (Thysanura.)

Locality: Prussian amber. Horizon: Ligurian.

1856. Giebel. Insect. d. vorwelt, 326.
See also Petrobius albomaculatus.

2742. Machilis (Petrobius) angueus. (Thysanura.)

Locality: Prussian amber. Horizon: Ligurian.

1856. Giebel. Insect. d. vorwelt, 326.
See also Petrobius angueus.

2743. Machilis (Petrobius) coruscus. (Thysanura.)

Locality: Prussian amber. Horizon: Ligurian.

1856. Giebel. Insect. d. vorwelt, 324-325.
See also Petrobius imbricatus, etc.

2744. Machilis (Petrobius) electus. (Thysanura.)

Locality: Prussian amber. Horizon: Oligocene.

1856. Giebel. Insect. d. vorwelt, 325.
See also Petrobius electus, etc.

2745. Machilis (Petrobius) imbricatus. (Thysanura.)

Locality: Prussian amber. Horizon: Ligurian.

1856. Giebel. Insect. d. vorwelt, 325.
See also Petrobius imbricatus, etc.

2746. Machilis (Petrobius) macrura. (Thysanura.)

Locality: Prussian amber. Horizon: Ligurian.

1856. Giebel. Insect. d. vorwelt, 326.
See also Petrobius macrura.

2747. Machilis polypoda. (Thysanura.)

Locality: Prussian amber. Horizon: Ligurian.

1832. Burmeister. Handb. ent., i: 637.
1836. " Man. ent., 578.

2748. Machilis (Petrobius) saliens. (Thysanura.)

Locality: Prussian amber. Horizon: Ligurian.

1856. Giebel. Insect. d. vorwelt, 326.
See also Petrobius saliens.

2749. Machilis (Petrobius) seticornis. (Thysanura.)

Locality: Prussian amber. Horizon: Ligurian.

1856. Giebel. Insect. d. vorwelt, 325–326.
See also Petrobius seticornis.

Macropalpus elegans. See Mucropalpus elegans.

2750. Maresa plebeja. (Termitina.)

Locality: Prussian amber. Horizon: Ligurian.

1856. Giebel. Insect. d. vorwelt, 298.
See also Termes antiqua, etc.

2751. Megasemum ronzonense. (Odonata.)

Locality: Le Puy, France. Horizon: ——.

1854. Aymard. Congr. scient. Fr., sess. xxii: 42 (undescr.).

2752. Mesobrochus imbecillus. (Hydropsychidæ.)

Locality: Florissant, Colo. Horizon: Oligocene.

1890. Scudder. Tert. ins. N. A., 189. *Pl.* 15, *fig.* 13.

2753. Mesobrochus lethæus. (Hydropsychidæ.)

Locality: Florissant, Colo. Horizon: Oligocene.

1890. Scudder. Tert. ins. N. A., 188. *Pl.* 15, *fig.* 11.

2754. Mormonia ——. (Sericostomidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1845. Berendt. Bernst. befindl. organ. reste vorw., i: 57.

2755. Mormonia ——. (Sericostomidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1854. Hagen. Verhandl. zool.-bot. ver. Wien, iv: 229.

2756. Mormonia tæniata. (Sericostomidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1854. Pictet. Hagen, Verhandl. zool.-bot. ver. Wien, iv: 229 (undescr.).
1854. " Traité de paléont., 2^{e} éd., ii: 376 (undescr.).
1856. " Berendt, Bernst. befindl. organ. reste vorw., ii, th. i: 103–105. *Pl.* 7, *figs.* 5*b–d*.
1864. Hagen. Phryg. synopsis synom., 50.
1864. " Verhandl. zool.-bot. gesellsch. Wien, xiv: 848.

2757. Mucropalpus elegans. (Hemerobina.)

Locality: Prussian amber. Horizon: Ligurian.

1854. Pictet. Traité de paléont., 2^{e} éd., ii: 378 (undescr.) (Macropalpus).
1856. Berendt. Bernst. befindl. organ. reste vorw., ii, th. i: 88.
See also Hemerobius resinatus.

2758. Myrmecoleon ——. (Myrmeleontidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1845. Berendt. Bernst. befindl. organ. reste vorw., i: 57.

2759. Myrmecoleon ——. (Myrmeleontidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1832. Burmeister. Handb. ent., i: 637.
1836. " Man. ent., 578.

2760. Myrmecoleon reticulatum. (Myrmeleontidæ.)

Locality: Radoboj, Croatia. Horizon: Mayencian.

1856. Giebel. Insect. d. vorwelt, 256.
See also Myrmeleon reticulatum.

2761. Myrmeleon ——. (Myrmeleontidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1830. Berendt. Insekten im bernstein, 35.

2762. Myrmeleon —— (larva). (Myrmeleontidæ.)

Locality: Seeberg, near Gotha, Germany. Horizon: Flötzmuschelnkalkstein.

1823. Schlotheim. Nachtr. z. petrefactenk., ii: 60–61, 85. *Pl.* 22, *fig.* 10.

Myrmeleon brevipenne. See III, ORTHOPTERA, Idem.

2763. Myrmeleon reticulatum. (Myrmeleontidæ.)

Locality: Radoboj, Croatia. Horizon: Mayencian.

1843. Charpentier. Verhandl. leop.-carol. akad. naturf., xx: 407–408. *Pl.* 22, *fig.* 2.
1849. Heer. Insektenf. tertiärg. Oeningen, ii: 92.
1852. Giebel. Deutschl. petref., 640.
1866. Hagen. Stett. ent. zeit., xxvii: 447 (a Myrmeleon?).
See also Myrmecoleon reticulatum.

2764. Mystacides ——. (Leptoceridæ.)

Locality: Prussian amber. Horizon: Ligurian.

1831. Burmeister. Oken, Isis, 1831: 1100.

2765. Mystacides ——. (Leptoceridæ.)

Compared with M. ferruginea.

Locality: Prussian amber. Horizon: Ligurian.

1856. Hagen. Berendt, Bernst. befindl. organ. reste vorw., ii, th. i: 121.

2766. Mystacides ——. (Leptoceridæ.)

Locality: Prussian amber. Horizon: Ligurian.

1856. Hagen. Berendt, Bernst. befindl. organ. reste vorw., ii, th. i: 121.

2767. Necropsocus ——.

Locality: Florissant, Colo. Horizon: Oligocene.

1883. Scudder. Ann. rep. U. S. geol. surv. terr., xii: 284.
See also III, HEMIPTERA, Necropsylla rigida.

Nemoura (several sp.). See Nemura, the same species.

2768. Nemura ——. (Perlina.)

Locality: Prussian amber. Horizon: Ligurian.

1845. Berendt. Bernst. befindl. organ. reste vorw., i: 57 (Nemoura).

2769. Nemura ——. (Perlina.)

Locality: Prussian amber. Horizon: Ligurian.

1856. Hagen. Berendt, Bernst. befindl. organ. reste vorw., ii, th. i: 73 (Nemoura).

2770. Nemura affinis. (Perlina.)

Locality: Prussian amber. Horizon: Ligurian.

1854. Berendt. Hagen, Verhandl. zool.-bot. ver. Wien, iv: 226 (undescr.) (Nemoura).
1856. " Bernst. befindl. organ. reste vorw., ii, th. i: 72. *Pl.* 6, *figs.* 12*b-d.*

2771. Nemura (Tæniopteryx) ciliata. (Perlina.)

Locality: Prussian amber. Horizon: Ligurian.

1854. Pictet. Traité de paléont., 2e éd., ii: 375 (undescr.) (Nemoura).
See also Tæniopteryx ciliata.

2772. Nemura (Leuctra) fusca. (Perlina.)

Locality: Prussian amber. Horizon: Ligurian.

1854. Pictet. Traité de paléont., 2e éd., ii: 375 (undescr.) (Nemoura).
See also Leuctra fusca.

2773. Nemura (Leuctra) gracilis. (Perlina.)

Locality: Prussian amber. Horizon: Ligurian.

1854. Pictet. Traité de paléont., 2e éd., ii: 375 (undescr.) (Nemoura).
See also Leuctra gracilis.

2774. Nemura lata. (Perlina.)

Locality: Prussian amber. Horizon: Ligurian.

1854. Hagen. Verhandl. zool.-bot. ver. Wien, iv: 226 (undescr.) (Nemoura).
1856. " Berendt, Bernst. befindl. organ. reste vorw., ii, th. i: 72.

2775. Nemura ocularis. (Perlina.)

Compared with N. variegata, N. meyeri.

Locality: Prussian amber. Horizon: Ligurian.

1854. Pictet. Hagen, Verhandl. zool.-bot. ver. Wein, iv: 226 (undescr.) (Nemoura).
1856. " Berendt, Bernst. befindl. organ. reste vorw., ii, th. i: 71-72. *Pl.* 6, *figs.* 11 *b-f.*

2776. Nemura puncticollis. (Perlina.)

Locality: Prussian amber. Horizon: Ligurian.

1854. Hagen. Verhandl. zool.-bot. ver. Wien, iv: 226 (undescr.) (Nemoura).
1856. " Berendt, Bernst. befindl. organ. reste vorw., ii, th. i: 73.

2777. Neuronia evanescens. (Phryganidæ.)

Locality: Florissant, Colo. Horizon: Oligocene.

1890. Scudder. Tert. ins. N. A., 196-197. *Pl.* 13, *fig.* 3.

2778. Neuronia picea. (Phryganidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1864. Hagen. Phryg. synopsis synon., 54.
1864. " Verhandl. zool.-bot. gesellsch. Wien, xiv: 852.
See also Phryganea picea, Limnophilus piceus.

2779. Neuropterites deperditus.

Locality: Krottensee, Bohemia. Horizon: Aquitanian.

1877. Novák. Sitzungsb. acad. wiss. Wien, lxxvi: 82–83. *Pl.* 2, *fig.* 4.
1877. " Fauna eger. tertiärb., 12–13. *Pl.* 2, *fig.* 4.

2780. Nothochrysa ———. (Hemerobina.)

Locality: Florissant, Colo. Horizon: Oligocene.

1881. Scudder. Bull. U. S. geol. surv. terr., vi: 293.
See also Palæochrysa ———, Tribochrysa ———.

2781. Nymphes mengeanus. (Hemerobina.)

Locality: Prussian amber. Horizon: Ligurian.

1854. Hagen. Verhandl. zool.-bot. ver. Wien, iv: 228 (undescr.).
1856. " Berendt, Bernst. befindl. organ. reste vorw., ii, th. i: 85–86. *Pl.* 8, *fig.* 15.
1866. " Stett. ent. zeit., xxvii: 453 (an hujus generis?).

2782. Nymphon (vic.) ———. (Hemerobina.)

Locality: Florissant, Colo. Horizon: Oligocene.

1881. Scudder. Bull. U. S. geol. surv. terr., vi: 293.
See also Palæochrysa ———, Tribochrysa ———.

2783. Odontocerus ——— (2 sp.). (Leptoceridæ.)

Locality: Prussian amber. Horizon: Ligurian.

1856. Hagen. Berendt, Bernst. befindl. organ. reste vorw., ii, th. i: 121.

Œschna ———. See **Æschna ——— Curtis.**

2784. Oligotoma antiqua. (Embidina.)

Locality: Prussian amber. Horizon: Ligurian.

1885. Hagen. Monogr. Emb., (2), 6–7.
1885. " Can. ent., xvii: 176–177.
1886. Scudder. Bull. U. S. geol. surv., No. 31: 53.
1886. " Zittel-Barrois, Traité de paléont., ii: 773.
See also Embia antiqua.

2785. Osmylus ———. (Hemerobina.)

Locality: Florissant, Colo. Horizon: Oligocene.

1882. Scudder. Proc. Bost. soc. nat. hist., xxi: 408.
1883. " Ann. rep. U. S. geol. surv. terr., xii: 283.
See also Osmylus requietus.

2786. Osmylus pictus. (Hemerobina.)

Compared with O. chrysops.

Locality: Prussian amber. Horizon: Ligurian.

1854. Hagen. Verhandl. zool.-bot. ver. Wien, iv: 228 (undescr.).
1856. " Berendt, Bernst. befindl. organ. reste vorw., ii, th. i: 86–87. *Pl.* 8, *fig.* 16.
1866. " Stett. ent. zeit., xxvii: 455.

2787. Osmylus requietus. (Hemerobina.)

Compared with O. pictus, Amber.

Locality: Florissant, Colo. Horizon: Oligocene.

1890. Scudder. Tert. ins. N. A., 162–163. *Pl.* 14, *figs.* 3, 8.
See also Osmylus ——.

2788. Paidium ——. (Thysanura.)

Locality: Prussian amber. Horizon: Ligurian.

1845. Berendt. Bernst. befindl. organ. reste vorw., i: 56.

2789. Paidium crassicorne. (Thysanura.)

Locality: Prussian amber. Horizon: Ligurian.

1845. Koch-Berendt. Jahrb. min., 1845: 872.
1854. " Berendt, Bernst. befindl. organ. reste vorw., i, th. ii: 122. *Pl.* 17, *fig.* 155.
1856. Giebel. Insect. d. vorwelt, 331.

Paidium piriforme. See Paidium pyriforme.

2790. Paidium pyriforme. (Thysanura.)

Locality: Prussian amber. Horizon: Ligurian.

1845. Koch-Berendt. Jahrb. min., 1845: 872 (piriforme).
1854. " Berendt, Bernst. befindl. organ. reste vorw., i, th. ii: 123. *Pl.* 17, *fig.* 156.
1856. Giebel. Insect. d. vorwelt, 331.

2791. Paladicella eruptionis. (Hydropsychidæ.)

Locality: Florissant, Colo. Horizon: Oligocene.

1890. Scudder. Tert. ins. N. A., 189–190. *Pl.* 15, *fig.* 14.

2792. Palæochrysa —— (Hemerobina.)

Locality: Florissant, Colo. Horizon: Oligocene.

1882. Scudder. Proc. Bost. soc. nat. hist., xxi: 408.
1883. " Ann. rep. U. S. geol. surv. terr., xii: 283.
See also Chrysopa (vic.) ——, Nothochrysa ——, Nymphon (vic.) ——, Palæochrysa stricta.

2793. Palæochrysa stricta. (Hemerobina.)

Locality: Florissant, Colo. Horizon: Oligocene.

1890. Scudder. Tert. ins. N. A., 166–168. *Pl.* 14, *figs.* 13, 14.
See also Palæochrysa ——.

2794. Palæopsocus tener. (Psocina.)

Locality: Prussian amber. Horizon: Ligurian.

1883. Kolbe. Stett. ent. zeit., xliv: 190.
See also Psocus tener, etc.

2795. Palingenia ——. (Ephemeridæ.)

Locality: Prussian amber. Horizon: Ligurian.

1845. Berendt. Bernst. befindl. organ. reste vorw., i: 57.

2796. Palingenia gigas. (Ephemeridæ.)

Locality: Prussian amber. **Horizon:** Ligurian.

1854. Hagen. Verhandl. zool.-bot. ver. Wien, iv: 227 (undescr.).

2797. Palingenia macrops. (Ephemeridæ.)

Locality: Prussian amber. **Horizon:** Ligurian.

1854. Pictet. Hagen, Verhandl. zool.-bot. ver. Wien, iv: 227 (undescr.).
1854. " Traité de paléont., 2e éd., ii: 371 (undescr.).
1856. Pictet-Hagen. Berendt, Bernst. befindl. organ. reste vorw., ii, th. i: 74-75. *Pl.* 6, *fig.* 2b; *pl.* 8, *fig.* 5.

2798. Panorpa ———. (Panorpidæ.)

Locality: Prussian amber. **Horizon:** Ligurian.

1830. Berendt. Insekten im bernstein, 35.

2799. Panorpa brevicauda. (Panorpidæ.)

Locality: Prussian amber. **Horizon:** Ligurian.

1854. Hagen. Verhandl. zool.-bot. ver. Wien, iv: 229 (undescr.).
1856. " Berendt, Bernst. befindl. organ. reste vorw., ii, th. i: 91. *Pl.* 8, *fig.* 21.

2800. Panorpa rigida. (Panorpidæ.)

Locality: Florissant, Colo. **Horizon:** Oligocene.

1890. Scudder. Tert. ins. N. A., 176.

2801. Paropsocus disjunctus. (Psocina.)

Locality: White River, Utah. **Horizon:** Oligocene.

1890. Scudder. Tert. ins. N. A., 118. *Pl.* 5, *fig.* 51.

2802. Parotermes ——— (3 sp.). (Termitina.)

Locality: Florissant, Colo. **Horizon:** Oligocene.

1881. Scudder. Harv. univ. bull., ii: 291.
1881. " Bull. U. S. geol. surv. terr., vi: 294.
1883. " Ann. rep. U. S. geol. surv. terr., xii: 285.
See also the following species.

2803. Parotermes fodinæ. (Termitina.)

Locality: Florissant, Colo. **Horizon:** Oligocene.

1883. Scudder. Proc. Amer. acad. arts sc., xix: 141.
1890. " Tert. ins. N. A., 112-113. *Pl.* 12, *figs.* 3, 22.
See also Parotermes ———.

2804. Parotermes hagenii. (Termitina.)

Locality: Florissant, Colo. **Horizon:** Oligocene.

1883. Scudder. Proc. Amer. acad. arts sc., xix: 139-140.
1890. " Tert. ins. N. A., 110-112. *Pl.* 12, *fig.* 2.
See also Parotermes ———.

2805. Parotermes insignis. (Termitina.)

Locality: Florissant, Colo. Horizon: Oligocene.

1883.	Scudder.	Proc. Amer. acad. arts sc., xix: 137–139.
1885.	"	Zittel, Handb. palaeont., i, th. ii: 773. *Fig.* 974.
1886.	"	Zittel-Barrois, Traité de paléont., ii: 773. *Fig.* 991.
1890.	"	Tert. ins. N. A., 108–110. *Pl.* 12, *figs.* 13, 14.

See also Parotermes ——.

2806. Perla ——. (Perlina.)

Locality: Prussian amber. Horizon: Ligurian.

1845.	Berendt.	Bernst. befindl. organ. reste vorw., i: 57.

2807. Perla ——. (Perlina.)

Locality: Prussian amber. Horizon: Ligurian.

1742.	Sendel.	Hist. succ., 30–31 (unnamed). *Pl.* 1, *figs.* 5, 5*a*, 6.
1825.	Guérin.	Dict. class. d'hist. nat., viii: 580 (Perle).
1829.	Serres.	Géogn. terr. tert., 242.

2808. Perla ——. (Perlina.)

Locality: Gurnet Bay, Isle of Wight. Horizon: Bembridge Limestone.

1879.	Woodward.	Quart. journ. geol. soc. Lond., xxxv: 344.
1879.	"	Geol. mag. (n. s.), v: 89.

2809. Perla prisca. (Perlina.)

Locality: Prussian amber. Horizon: Ligurian.

1854.	Pictet.	Hagen, Verhandl. zool.-bot. ver. Wien, iv: 226 (undescr.).
1854.	"	Traité de paléont., 2^e éd., ii: 375 (undescr.).
1856.	"	Berendt, Bernst. befindl. organ. reste vorw., ii, th. i: 65–66. *Pl.* 6, *figs.* 7*b–d*.

2810. Perla resinata. (Perlina.)

Locality: Prussian amber. Horizon: Ligurian.

1854.	Hagen.	Verhandl. zool.-bot. ver. Wien, iv: 226 (undescr.).
1856.	"	Berendt, Bernst. befindl. organ. reste vorw., ii, th. i: 66–67. *Pl.* 8, *fig.* 1.

2811. Perla succinica. (Perlina.)

Compared with P. annulicauda.

Locality: Prussian amber. Horizon: Ligurian.

1854.	Hagen.	Verhandl. zool.-bot. ver. Wien, iv: 226 (undescr.).
1856.	"	Berendt, Bernst. befindl. organ. reste vorw., ii, th. i: 67.

2812. Petalura acutipennis. (Odonata.)

Locality: Sieblos, Rhenish Prussia. Horizon: Aquitanian.

1859.	Hagen.	Palaeontogr., viii: 22–26. *Pl.* 3, *figs.* 1–4.

2813. Petalura ovatipennis. (Odonata.)

Locality: Sieblos, Rhenish Prussia. Horizon: Aquitanian.

1860.	Hagen.	Hassencamp, Würzb. naturw. zeitschr., i: 79 (undescr.).

2814. Petrobius ——. (Thysanura.)

Locality: Prussian amber. Horizon: Ligurian.

1845.	Berendt.	Bernst. befindl. organ. reste vorw., i: 56.

2815. Petrobius ——— (8 sp.). (Thysanura.)

Locality: Prussian amber. Horizon: Ligurian.

1856. Menge. Progr. petrischule Danzig, 1856: 11.

2816. Petrobius albomaculatus. (Thysanura.)

Locality: Prussian amber. Horizon: Ligurian.

1854. Menge. Koch-Berendt, Bernst. befindl. organ. reste vorw., i, th. ii: 115.
See also Machilis albomaculatus.

Petrobius anguens. See Petrobius angueus.

2817. Petrobius angueus. (Thysanura.)

Locality: Prussian amber. Horizon: Ligurian.

1845. Koch-Berendt. Jahrb. mineral, 1845: 872.
1854. " Berendt, Bernst. befindl. organ. reste vorw., i, th. ii: 114–115 (anguens on plate). *Pl.* 14, *fig.* 120.
See also Machilis angueus.

2818. Petrobius confinis. (Thysanura.)

Locality: Prussian amber. Horizon: Ligurian.

1845. Koch-Berendt. Jahrb. mineral., 1845: 872.
1854. " Berendt, Bernst. befindl. organ. reste vorw., i, th. ii: 115. *Pl.* 17, *fig.* 153.
See also Petrobius electus, etc.

2819. Petrobius coruscus. (Thysanura.)

Locality: Prussian amber. Horizon: Ligurian.

1845. Koch-Berendt. Jahrb. mineral., 1845: 872.
1854. " Berendt, Bernst. befindl. organ. reste vorw., i, th. ii: 111–112. *Pl.* 14, *fig.* 116.
See also Petrobius imbricatus, etc.

2820. Petrobius electus. (Thysanura.)

Locality: Prussian amber. Horizon: Ligurian.

1845. Koch-Berendt. Jahrb. mineral., 1845: 872.
1854. " Berendt, Bernst. befindl. organ. reste vorw., i, th. ii: 113. *Pl.* 14, *fig.* 119.
See also Machilis (Petrobius) electus, P. confinis.

2821. Petrobius imbricatus. (Thysanura.)

Locality: Prussian amber. Horizon: Ligurian.

1845. Koch-Berendt. Jahrb. mineral., 1845: 872.
1854. " Berendt, Bernst. befindl. organ. reste vorw., i, th. ii: 112. *Pl.* 14, *fig.* 117.
See also Machilis (Petrobius) imbricatus, P. coruscus, Machilis (Petrobius) coruscus, P. longipalpus.

2822. Petrobius longipalpus. (Thysanura.)

Locality: Prussian amber. Horizon: Ligurian.

1845. Koch-Berendt. Jahrb. mineral., 1845: 872.
1854. " Berendt, Bernst. befindl. organ. reste vorw., i, th. ii: 113. *Pl.* 14, *fig.* 118.
See also Petrobius imbricatus, etc.

2823. Petrobius macrura. (Thysanura.)

Locality: Prussian amber. Horizon: Ligurian.

1854. **Menge.** Koch-Berendt, Bernst. befindl. organ. reste vorw., i, th. ii: 115.
See also Machilis (Petrobius) macrura.

2824. Petrobius saliens. (Thysanura.)

Locality: Prussian amber. Horizon: Ligurian.

1854. **Menge.** Koch-Berendt, Bernst. befindl. organ. reste vorw., i, th. ii: 115.
See also Machilis (Petrobius) saliens.

2825. Petrobius seticornis. (Thysanura.)

Locality: Prussian amber. Horizon: Ligurian.

1845. **Koch-Berendt.** Jahrb. mineral., 1845: 872.
1854. " Berendt, Bernst. befindl. organ. reste vorw., i, th. ii: 114. *Pl.* 15, *fig.* 124.
1885. **Scudder.** Zittel, Handb. palaeont., i, th. ii: 772. *Fig.* 971.
1886. " Zittel-Barrois, Traité de paléont., ii: 772. *Fig.* 988.
See also Machilis (Petrobius) seticornis.

2826. Philopotamus ——— (2 sp.). (Hydropsychidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1856. **Hagen.** Berendt, Bernst. befindl. organ. reste vorw., ii, th. i: 119.

2827. Philotarsus abnormis. (Psocina.)

Locality: Prussian amber. Horizon: Ligurian.

1883. **Kolbe.** Stett. ent. zeit., xliv: 190.
See also Elipsocus abnormis, etc.

2828. Philotarsus antiquus. (Psocina.)

Locality: Prussian amber. Horizon: Ligurian.

1883. **Kolbe.** Stett. ent. zeit., xliv: 187-188.

2829. Phryganea ——— (cases). (Trichoptera.)

Locality: Jutland, Denmark. Horizon: Pliocene?

1836. **Beck.** Proc. geol. soc. Lond., ii: 219.
1836. " Lond. Edinb. phil. mag., (3), viii: 555.

2830. Phryganea ———. (Trichoptera.)

Locality: Prussian amber. Horizon: Ligurian.

1845. **Berendt.** Bernst. befindl. organ. reste vorw., i: 57.

2831. Phryganea ———. (Trichoptera.)

Locality: Prussian amber. Horizon: Ligurian.

1832. **Burmeister.** Handb. ent., i: 637.
1836. " Man. ent., 578.

2832. Phryganea ———. (Trichoptera.)

Locality: Prussian amber. Horizon: Ligurian.

1835. **Gravenhorst.** Uebers. schles. gesellsch. vaterl. cult., 1834: 92.

2815. Petrobius ——— (8 sp.). (Thysanura.)

Locality: Prussian amber. Horizon: Ligurian.

1856. Menge. Progr. petrischule Danzig, 1856: 11.

2816. Petrobius albomaculatus. (Thysanura.)

Locality: Prussian amber. Horizon: Ligurian.

1854. Menge. Koch-Berendt, Bernst. befindl. organ. reste vorw., i, th. ii: 115.

See also Machilis albomaculatus.

Petrobius anguens. See Petrobius angueus.

2817. Petrobius angueus. (Thysanura.)

Locality: Prussian amber. Horizon: Ligurian.

1845. Koch-Berendt. Jahrb. mineral, 1845: 872.
1854. " Berendt, Bernst. befindl. organ. reste vorw., i, th. ii: 114–115 (anguens on plate). *Pl.* 14, *fig.* 120.

See also Machilis angueus.

2818. Petrobius confinis. (Thysanura.)

Locality: Prussian amber. Horizon: Ligurian.

1845. Koch-Berendt. Jahrb. mineral., 1845: 872.
1854. " Berendt, Bernst. befindl. organ. reste vorw., i, th. ii: 115. *Pl.* 17, *fig.* 153.

See also Petrobius electus, etc.

2819. Petrobius coruscus. (Thysanura.)

Locality: Prussian amber. Horizon: Ligurian.

1845. Koch-Berendt. Jahrb. mineral., 1845: 872.
1854. " Berendt, Bernst. befindl. organ. reste vorw., i, th. ii: 111–112. *Pl.* 14, *fig.* 116.

See also Petrobius imbricatus, etc.

2820. Petrobius electus. (Thysanura.)

Locality: Prussian amber. Horizon: Ligurian.

1845. Koch-Berendt. Jahrb. mineral., 1845: 872.
1854. " Berendt, Bernst. befindl. organ. reste vorw., i, th. ii: 113. *Pl.* 14, *fig.* 119.

See also Machilis (Petrobius) electus, P. confinis.

2821. Petrobius imbricatus. (Thysanura.)

Locality: Prussian amber. Horizon: Ligurian.

1845. Koch-Berendt. Jahrb. mineral., 1845: 872.
1854. " Berendt, Bernst. befindl. organ. reste vorw., i, th. ii: 112. *Pl.* 14, *fig.* 117.

See also Machilis (Petrobius) imbricatus, P. coruscus, Machilis (Petrobius) coruscus, P. longipalpus.

2822. Petrobius longipalpus. (Thysanura.)

Locality: Prussian amber. Horizon: Ligurian.

1845. Koch-Berendt. Jahrb. mineral., 1845: 872.
1854. " Berendt, Bernst. befindl. organ. reste vorw., i, th. ii: 113. *Pl.* 14, *fig.* 118.

See also Petrobius imbricatus, etc.

2823. Petrobius macrura. (Thysanura.)

Locality: Prussian amber. Horizon: Ligurian.

1854. Menge. Koch-Berendt, Bernst. befindl. organ. reste vorw., i, th. ii: 115.
See also Machilis (Petrobius) macrura.

2824. Petrobius saliens. (Thysanura.)

Locality: Prussian amber. Horizon: Ligurian.

1854. Menge. Koch-Berendt, Bernst. befindl. organ. reste vorw., i, th. ii: 115.
See also Machilis (Petrobius) saliens.

2825. Petrobius seticornis. (Thysanura.)

Locality: Prussian amber. Horizon: Ligurian.

1845. Koch-Berendt. Jahrb. mineral., 1845: 872.
1854. " Berendt, Bernst. befindl. organ. reste vorw., i, th. ii: 114. *Pl.* 15, *fig.* 124.
1885. Scudder. Zittel, Handb. palaeont., i, th. ii: 772. *Fig.* 971.
1886. " Zittel-Barrois, Traité de paléont., ii: 772. *Fig.* 988.
See also Machilis (Petrobius) seticornis.

2826. Philopotamus —— (2 sp.). (Hydropsychidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1856. Hagen. Berendt, Bernst. befindl. organ. reste vorw., ii, th. i: 119.

2827. Philotarsus abnormis. (Psocina.)

Locality: Prussian amber. Horizon: Ligurian.

1883. Kolbe. Stett. ent. zeit., xliv: 190.
See also Elipsocus abnormis, etc.

2828. Philotarsus antiquus. (Psocina.)

Locality: Prussian amber. Horizon: Ligurian.

1883. Kolbe. Stett. ent. zeit., xliv: 187-188.

2829. Phryganea —— (cases). (Trichoptera.)

Locality: Jutland, Denmark. Horizon: Pliocene?.

1836. Beck. Proc. geol. soc. Lond., ii: 219.
1836. " Lond. Edinb. phil. mag., (3), viii: 555.

2830. Phryganea ——. (Trichoptera.)

Locality: Prussian amber. Horizon: Ligurian.

1845. Berendt. Bernst. befindl. organ. reste vorw., i: 57.

2831. Phryganea ——. (Trichoptera.)

Locality: Prussian amber. Horizon: Ligurian.

1832. Burmeister. Handb. ent., i: 637.
1836. " Man. ent., 578.

2832. Phryganea ——. (Trichoptera.)

Locality: Prussian amber. Horizon: Ligurian.

1835. Gravenhorst. Uebers. schles. gesellsch. vaterl. cult., 1834: 92.

2815. Petrobius ——— (8 sp.). (Thysanura.)

Locality: Prussian amber. Horizon: Ligurian.

1856. Menge. Progr. petrischule Danzig, 1856: 11.

2816. Petrobius albomaculatus. (Thysanura.)

Locality: Prussian amber. Horizon: Ligurian.

1854. Menge. Koch-Berendt, Bernst. befindl. organ. reste vorw., i, th. ii: 115.
See also Machilis albomaculatus.

Petrobius anguens. See Petrobius angueus.

2817. Petrobius angueus. (Thysanura.)

Locality: Prussian amber. Horizon: Ligurian.

1845. Koch-Berendt. Jahrb. mineral, 1845: 872.
1854. " Berendt, Bernst. befindl. organ. reste vorw., i, th. ii: 114–115 (anguens on plate). *Pl.* 14, *fig.* 120.
See also Machilis angueus.

2818. Petrobius confinis. (Thysanura.)

Locality: Prussian amber. Horizon: Ligurian.

1845. Koch-Berendt. Jahrb. mineral., 1845: 872.
1854. " Berendt, Bernst. befindl. organ. reste vorw., i, th. ii: 115. *Pl.* 17, *fig.* 153.
See also Petrobius electus, etc.

2819. Petrobius coruscus. (Thysanura.)

Locality: Prussian amber. Horizon: Ligurian.

1845. Koch-Berendt. Jahrb. mineral., 1845: 872.
1854. " Berendt, Bernst. befindl. organ. reste vorw., i, th. ii: 111–112. *Pl.* 14, *fig.* 116.
See also Petrobius imbricatus, etc.

2820. Petrobius electus. (Thysanura.)

Locality: Prussian amber. Horizon: Ligurian.

1845. Koch-Berendt. Jahrb. mineral., 1845: 872.
1854. " Berendt, Bernst. befindl. organ. reste vorw., i, th. ii: 113. *Pl.* 14, *fig.* 119.
See also Machilis (Petrobius) electus, P. confinis.

2821. Petrobius imbricatus. (Thysanura.)

Locality: Prussian amber. Horizon: Ligurian.

1845. Koch-Berendt. Jahrb. mineral., 1845: 872.
1854. " Berendt, Bernst. befindl. organ. reste vorw., i, th. ii: 112. *Pl.* 14, *fig.* 117.
See also Machilis (Petrobius) imbricatus, P. coruscus, Machilis (Petrobius) coruscus, P. longipalpus.

2822. Petrobius longipalpus. (Thysanura.)

Locality: Prussian amber. Horizon: Ligurian.

1845. Koch-Berendt. Jahrb. mineral., 1845: 872.
1854. " Berendt, Bernst. befindl. organ. reste vorw., i, th. ii: 113. *Pl.* 14, *fig.* 118.
See also Petrobius imbricatus, etc.

2823. Petrobius macrura. (Thysanura.)

Locality: Prussian amber. Horizon: Ligurian.

1854. Menge. Koch-Berendt, Bernst. befindl. organ. reste vorw., i, th. ii: 115.
See also Machilis (Petrobius) macrura.

2824. Petrobius saliens. (Thysanura.)

Locality: Prussian amber. Horizon: Ligurian.

1854. Menge. Koch-Berendt, Bernst. befindl. organ. reste vorw., i, th. ii: 115.
See also Machilis (Petrobius) saliens.

2825. Petrobius seticornis. (Thysanura.)

Locality: Prussian amber. Horizon: Ligurian.

1845. Koch-Berendt. Jahrb. mineral., 1845: 872.
1854. " Berendt, Bernst. befindl. organ. reste vorw., i, th. ii: 114. *Pl.* 15, *fig.* 124.
1885. Scudder. Zittel, Handb. palaeont., i, th. ii: 772. *Fig.* 971.
1886. " Zittel-Barrois, Traité de paléont., ii: 772. *Fig.* 988.
See also Machilis (Petrobius) seticornis.

2826. Philopotamus ——— (2 sp.). (Hydropsychidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1856. Hagen. Berendt, Bernst. befindl. organ. reste vorw., ii, th. i: 119.

2827. Philotarsus abnormis. (Psocina.)

Locality: Prussian amber. Horizon: Ligurian.

1883. Kolbe. Stett. ent. zeit., xliv: 190.
See also Elipsocus abnormis, etc.

2828. Philotarsus antiquus. (Psocina.)

Locality: Prussian amber. Horizon: Ligurian.

1883. Kolbe. Stett. ent. zeit., xliv: 187-188.

2829. Phryganea ——— (cases). (Trichoptera.)

Locality: Jutland, Denmark. Horizon: Pliocene?.

1836. Beck. Proc. geol. soc. Lond., ii: 219.
1836. " Lond. Edinb. phil. mag., (3), viii: 555.

2830. Phryganea ———. (Trichoptera.)

Locality: Prussian amber. Horizon: Ligurian.

1845. Berendt. Bernst. befindl. organ. reste vorw., i: 57.

2831. Phryganea ———. (Trichoptera.)

Locality: Prussian amber. Horizon: Ligurian.

1832. Burmeister. Handb. ent., i: 637.
1836. " Man. ent., 578.

2832. Phryganea ———. (Trichoptera.)

Locality: Prussian amber. Horizon: Ligurian.

1835. Gravenhorst. Uebers. schles. gesellsch. vaterl. cult., 1834: 92.

2833. Phryganea ———. (Trichoptera.)

Compared with P. grandis.

Locality: Mombach, Rhenish Prussia. Horizon: Middle Tertiary.

1845. Hoeninghaus. Michelin, Ann. soc. ent. Fr., (2), iii, bull. ent., 31.
See also P. mombachiana.

2834. Phryganea ——— (cases). (Trichoptera.)

Locality: Lewes levels, England. Horizon: Alluvium.

1829. Mantell. Trans. geol. soc. Lond., (2), iii: 201.
1888. Bell. Entom., xxi: 2.

2835. Phryganea (or Ephemera) ———.

Locality: Oeningen, Baden. Horizon: Tortonian.

1820. Schlotheim. Petrefactenk., 43.

2836. Phryganea ———. (Trichoptera.)

Locality: Prussian amber. Horizon: Ligurian.

1742. Sendel. Hist. succ.; 85. *Pl.* 2, *figs.* 21, 23.
1852. Guérin. Dict. class. d'hist. nat., viii: 580 (Frigane).
1829. Serres. Géogn. terr. tert., 242.
1830. Berendt. Insekten im bernstein, 35.

2837. Phryganea ———. (Trichoptera.)

Locality: Gurnet Bay, Isle of Wight. Horizon: Bembridge Limestone.

1879. Woodward. Quart. journ. geol. soc. Lond., xxxv: 344.
1879. " Geol. mag. (n. s.), v: 89.

2838. Phryganea antiqua. (Phryganidæ.)

Locality: Oeningen, Baden. Horizon: Tortonian.

1849. Heer. Insektenf. tertiärg. Oeningen, ii: 89-90. *Pl.* 5, *fig.* 10.
1852. Giebel. Deutschl. petref., 639.
1854. Pictet. Traité de paléont., 2e éd., ii: 376 (undescr.).
1856. " Berendt, Bernst. befindl. organ. reste vorw., ii, th. i: 97-98 (= P. fossilis Pict. nec antiqua Heer).
1856. Giebel. Insect. d. vorwelt, 268.
1864. Hagen. Phryg. synopsis synom., 59.
1864. " Verhandl. zool.-bot. gesellsch. Wien, xiv: 857.
See also Phryganea fossilis.

2839. Phryganea aquensis. (Phryganidæ.)

Locality: Aix, France. Horizon: Ligurian.

1883. Heer. Flora foss. grönl., ii: 148. *Pl.* 109, *fig.* 15.

2840. Phryganea blumii (larval cases). (Phryganidæ.)

Locality: Leistadt, near Dürkheim, Bavaria. Horizon: ———.

1844. Hepp. Jahresb. Pollich., ii: 19-23.

2841. Phryganea corentiana (cases). (Phryganidæ.)

Locality: Gergovia, France. Horizon: Aquitanian.

1870. Oustalet. Am. sc. géol., ii, art. 3: 101.
See also Indusia tubulata, etc.

2842. **Phryganea dubia.** (Limnophilidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1854. Pictet. Hagen, Verhandl. zool.-bot. ver. Wien, iv: 229 (undescr.).
1856. Hagen. Berendt, Bernst. befindl. organ. reste vorw., ii, th. i: 100–101. *Pl.* 7, *figs.* 4*b–d*.

See also Limnophilus dubius.

2843. **Phryganea fossilis.** (Phryganidæ.)

Compared with P. minor.

Locality: Prussian amber. Horizon: Ligurian.

1854. Pictet. Hagen, Verhandl. zool.-bot. ver. Wien, iv: 229 (undescr.).
1854. " Traité de paléont., 2e éd., ii: 376 (undescr.).
1856. " Berendt, Bernst. befindl. organ. reste vorw., ii, th. i: 96. *Pl.* 7, *figs.* 1*b–d*, 2*b–c*.
1864. Hagen. Phryg. synopsis synom., 63.
1864. " Verhandl. zool.-bot. gesellsch. Wien, xiv: 861.

See also Phryganea antiqua.

2844. **Phryganea gerandiana** (cases). (Phryganidæ.)

Locality: Chavroches, Allier, France. Horizon: Aquitanian.

1870. Oustalet. Ann. sc. géol., ii, art., 3: 101–102.

See also Indusia tubulata, etc.

2845. **Phryganea gigantea** (cases). (Phryganidæ.)

Locality: Auvergne, France. Horizon: Aquitanian.

1844. Hepp. Jahresb. Pollich., ii: 23.

See also Indusia tubulata, etc.

2846. **Phryganea hyperborea.** (Phryganidæ.)

Compared with P. grandis, etc.

Locality: Ober Atanakerdluk, Greenland. Horizon: ———.

1883. Heer. Flora foss. grönl., ii: 147–148. *Pl.* 109, *figs.* 13, 13*b*.

2847. **Phryganea labefacta.** (Phryganidæ.)

Compared with P. grandis.

Locality: Florissant, Colo. Horizon: Oligocene.

1890. Scudder. Tert. ins. N. A., 197–198. *Pl.* 13, *fig.* 5.

2848. **Phryganea longirostris.** (Phryganidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1854. Hagen. Verhandl. zool.-bot. ver. Wien, iv: 229 (undescr.).
1856. " Berendt, Bernst. befindl. organ. reste vorw., ii, th. i: 100.
1864. " Phryg. synopsis synom., 65.
1864. " Verhandl. zool.-bot. gesellsch. Wien, xiv: 863.

2849. **Phryganea major.** (Phryganidæ.)

Locality: Valnerina, Italy. Horizon: Quaternary.

1880. Verri. Atti soc. ital. sc. nat., xxiii: 289 (Friganea).

Phryganea mombachana. See **Phryganea mombachiana.**

2850. Phryganea mombachiana. (Phryganidæ.)

Compared with P. grandis.

Locality: Mombach, Rhenish Prussia. Horizon: Middle Tertiary.

1844.	Hoeninghaus.	Phryganea mombachiana. *Figs.*
1848.	Bronn.	Index palaeont., i, nomencl., 969 (mombachana).
1873.	Hagen.	Verhandl. zool.-bot. gesellsch. Wien, xxiii: 379.
1873.	Hagen.	Beitr. kenntn. Phryg., 3.

See also Phryganea ——— Hoeninghaus.

2851. Phryganea operta. (Phryganidæ.)

Locality: White River, Colo. Horizon: Oligocene.

1877.	Scudder.	Bull. U. S. geol. surv. terr., iii: 762.

See also Hydropsyche operta.

2852. Phryganea parschlugiana. (Phryganidæ.)

Locality: Parschlug, Styria. Horizon: ———.

1883.	Heer.	Flora foss. grönl., ii: 148. *Pl.* 109, *fig.* 14.

2853. Phryganea picea. (Phryganidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1854.	Pictet.	Hagen, Verhandl. zool.-bot. ver. Wien, iv: 229 (undescr.).
1856.	Hagen.	Berendt, Bernst. befindl. organ. reste vorw., ii, th. i: 98–99. *Pl.* 7, *figs.* 3*b–c*; *pl.* 8, *fig.* 24.

See also Limnophilus piceus, Neuronia picea.

2854. Phryganeolitha vetusta. (Trichoptera.)

Compared with Phryganea wæneri Linn.

Locality: Prussian amber. Horizon: Ligurian.

1813.	Germar.	Germ., Mag. entom., i: 17–18.
1856.	Giebel.	Insect. d. vorwelt, 268–269.

See also Polycentropus vetustus, P. xanthocoma, Hydropsyche xanthocoma.

2855. Planocephalus aselloides. (Thysanura.)

Locality: Florissant, Colo. Horizon: Oligocene.

1885.	Scudder.	Descr. artic., 1–6. *Figs.* 1–3.
1885.	"	Mem. nat. acad. sc., iii: 85–90. *Figs.* 1–3.
1885.	Bertkau.	Sitzungsb. niederrhein. gesellsch. natur.- u. heilk., 1885: 298–300.
1885.	Scudder.	Zittel, Handb. palaeont., i, th. ii: 772. *Figs.* 972*ab*.
1886.	"	Zittel-Barrois, Traité de paléont., ii: 772. *Figs.* 989*ab*.
1886.	"	Bull. U. S. geol. surv., No. 31: 52.
1890.	"	Tert. ins. N. A., 94–101. *Figs.* 1–3.
1890.	Lesley.	Dict. foss. Penns., ii: 651. *Figs.*

See also ——— ——— Scudder.

2856. Platycnemis antiqua. (Odonata.)

Locality: Prussian amber. Horizon: Ligurian.

1890.	Scudder.	Tert. ins. N. A., 127.

See also Agrion antiquum, etc.

2857. Platycnemis icarus. (Odonata.)

Locality: Rott, Rhenish Prussia. **Horizon:** Aquitanian.

1890. Scudder. Tert. ins. N. A., 127.

See also Agrion icarus.

2858. Podagrion abortivum. (Odonata.)

Locality: Green River, Wyo. **Horizon:** Oligocene.

1878. Scudder. Bull. U. S. geol. surv. terr., iv: 775–776.
1890. " Tert. ins. N. A., 134. *Pl.* 6, *figs.* 7, 8.

2859. Podura ——. (Thysanura.)

Locality: Prussian amber. **Horizon:** Ligurian.

1845. Berendt. Bernst. befindl. organ. reste vorw., i: 56.

2860. Podura ——. (Thysanura.)

Locality: Prussian amber. **Horizon:** Ligurian.

1835. Gravenhorst. Uebers. schles. gesellsch. vaterl. cult., 1834: 93.

2861. Podura fuscata. (Thysanura.)

Locality: Prussian amber. **Horizon:** Ligurian.

1845. Koch-Berendt. Jahrb. min., 1845: 872.
1854. " Berendt, Bernst. befindl. organ. reste vorw., i, th. ii: 119. *Pl.* 15, *fig.* 127.
1856. Giebel. Insect. d. vorwelt, 330.

2862. Podura pilosa. (Thysanura.)

Locality: Prussian amber. **Horizon:** Ligurian.

1845. Koch-Berendt. Jahrb. min., 1845: 872.
1854. " Berendt, Bernst. befindl. organ. reste vorw., i, th. ii: 120. *Pl.* 15, *fig.* 129.
1856. Giebel. Insect. d. vorwelt, 330.

2863. Podura pulchra. (Thysanura.)

Locality: Prussian amber. **Horizon:** Ligurian.

1845. Koch-Berendt. Jahrb. min., 1845: 872.
1854. " Berendt, Bernst. befindl. organ. reste vorw., i, th. ii: 119–120. *Pl.* 15, *fig.* 128.
1856. Giebel. Insect. d. vorwelt, 330.

2864. Podura tæniata. (Thysanura.)

Locality: Prussian amber. **Horizon:** Ligurian.

1845. Koch-Berendt. Jahrb. min., 1845: 872.
1854. " Berendt, Bernst. befindl. organ. reste vorw., i, th. ii: 119 (tænita). *Pl.* 15, *fig.* 126.
1856. Giebel. Insect. d. vorwelt, 329–330.

Podura tænita. See Podura tæniata.

2865. Polycentropus ——. (Hydropsychidæ.)

Locality: Prussian amber. **Horizon:** Ligurian.

1845. Berendt. Bernst. befindl. organ. reste vorw., i: 57.

2866. Polycentropus affinis. (Hydropsychidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1854. Pictet. Hagen, Verhandl. zool.-bot. ver. Wien, iv: 229 (undescr.).
1854. " Traité de paléont., 2e éd., ii: 376 (undescr.).
1856. " Berendt, Bernst. befindl. organ. reste vorw., ii, th. i: 114. *Pl.* 7, *figs.* 7*b*–*c*.
1864. Hagen. Phryg. synopsis synom., 75.
1864. " Verhandl. zool.-bot. gesellsch. Wien, xvi: 873.

2867. Polycentropus antiquus. (Hydropsychidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1856. Hagen. Berendt, Bernst. befindl. organ. reste vorw., ii, th. i: 113.
1864. " Phryg. synopsis synom., 75.
1864. " Verhandl. zool.-bot. gesellsch. Wien, xiv: 873.

2868. Polycentropus atratus. (Hydropsychidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1854. Pictet. Hagen, Verhandl. zool.-bot. ver. Wien, iv: 229 (undescr.).
1854. " Traité de paléont., 2e éd., ii: 376 (undescr.).
1856. " Berendt, Bernst. befindl. organ. reste vorw., ii, th. i: 114. *Pl.* 7. *fig.* 10.
1864. Hagen. Phryg. synopsis synom., 75.
1864. " Verhandl. zool.-bot. gesellsch. Wien, xiv: 873.

2869. Polycentropus barbatus. (Hydropsychidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1854. Pictet. Hagen, Verhandl. zool.-bot. ver. Wien, iv: 229 (undescr.).
1856. Hagen. Berendt, Bernst. befindl. organ. reste vorw., ii, th. i: 112. *Pl.* 6, *fig.* 17*b*.
1864. " Phryg. synopsis synom., 75.
1864. " Verhandl. zool.-bot. gesellsch. Wien, xiv: 873.

See also Hydropsyche barbata.

2870. Polycentropus dubius. (Hydropsychidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1854. Pictet. Hagen, Verhandl. zool.-bot. ver. Wien, iv: 229 (undescr.).
1854. " Traité de paléont., 2e éd., ii: 376 (undescr.).
1856. " Berendt, Bernst. befindl. organ. reste vorw., i, th. ii: 115. *Pl.* 7 *fig.* 14.
1864. Hagen. Phryg. synopsis synom., 75.
1864. " Verhandl. zool.-bot. gesellsch. Wien, xiv: 873.

See also Polycentropus fusconiger, etc.

2871. Polycentropus eviratus. (Hydropsychidæ.)

Locality: Florissant, Colo. Horizon: Oligocene.

1890. Scudder. Tert. ins. N. A., 182. *Pl.* 13, *fig.* 7.

2872. Polycentropus exesus. (Hydropsychidæ.)

Locality: Florissant, Colo. Horizon: Oligocene.

1890. Scudder. Tert. ins. N. A., 181.

2873. Polycentropus fusconiger. (Hydropsychidæ.)

Locality: Prussian amber. **Horizon:** Ligurian.

1856. Hagen. Berendt, Bernst. befindl. organ. reste vorw., ii, th. i: 115 (= P. incertus?).

See also Polycentropus incertus, P. dubius, P. macrocephalus, Aphelocheira fusconigra.

2874. Polycentropus guttulatus. (Hydropsychidæ.)

Locality: Prussian amber. **Horizon:** Ligurian.

1854. Pictet. Hagen, Verhandl. zool.-bot. ver. Wien, iv: 229 (undescr.).
1854. " Traité de paléont., 2e éd., ii: 376 (undescr.).
1856. " Berendt, Bernst. befindl. organ. reste vorw., ii, th. i: 111–112. *Pl.* 7, *figs.* 8*b–c*.
1864. Hagen. Phryg. synopsis synom., 76.
1864. " Verhandl. zool.-bot. gesellsch. Wien, xiv: 874.

2875. Polycentropus incertus. (Hydropsychidæ.)

Locality: Prussian amber. **Horizon:** Ligurian.

1854. Pictet. Traité de paléont., 2e éd., ii: 376 (undescr.).
1856. " Berendt, Bernst. befindl. organ. reste vorw., ii, th. i: 115. *Pl.* 7, *fig.* 13.
1864. Hagen. Phryg. synopsis synom., 76.
1864. " Verhandl. zool.-bot. gesellsch. Wien, xiv: 874.

See also Polycentropus fusconiger, etc.

2876. Polycentropus lævis. (Hydropsychidæ.)

Locality: Prussian amber. **Horizon:** Ligurian.

1854. Pictet. Traité de paléont., 2e éd., ii: 376 (undescr.).
1856. " Berendt, Bernst. befindl. organ. reste vorw., ii, th. i: 110–111.
1864. Hagen. Phryg. synopsis synom., 76 (= P. latus).
1864. " Verhandl. zool.-bot. gesellsch. Wien, xiv: 874 (= P. latus).

See also Polycentropus latus.

2877. Polycentropus latus. (Hydropsychidæ.)

Locality: Prussian amber. **Horizon:** Ligurian.

1854. Pictet. Hagen, Verhandl. zool.-bot. ver. Wien, iv: 229 (undescr.).
1854. " Traité de paléont., 2e éd., ii: 376 (undescr.).
1856. " Berendt, Bernst. befindl. organ. reste vorw., ii, th. i: 109–111. *Pl.* 7, *figs.* 11*b–e*; *pl.* 8, *fig.* 27.
1864. Hagen. Phryg. synopsis synom., 76.
1864. " Verhandl. zool.-bot. gesellsch. Wien, xiv: 874.

See also Polycentropus lævis.

2878. Polycentropus macrocephalus. (Hydropsychidæ.)

Locality: Prussian amber. **Horizon:** Ligurian.

1854. Pictet. Traité de paléont., 2e éd., ii: 376 (undescr.).
1856. " Berendt, Bernst. befindl. organ. reste vorw. ii, th. i: 115.
1864. Hagen. Phryg. synopsis synom., 76 (= P. dubius).
1864. " Verhandl. zool.-bot. gesellsch. Wien, xiv: 874 (= P. dubius).

See also Polycentropus fusconiger, etc.

2879. Polycentropus priscus. (Hydropsychidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1856. Hagen. Berendt, Bernst. befindl. organ. reste vorw., ii, th. i: 116. *Pl.* 7, *fig.* 16.
1864. " Phryg. synopsis synom., 76.
1864. " Verhandl. zool.-bot. gesellsch. Wien, xiv: 874.

See also Hydropsyche prisca.

2880. Polycentropus vetustus. (Hydropsychidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1854. Germar. Hagen, Verhandl. zool.-bot. ver. Wien, iv: 229 (undescr.).
1856. Hagen. Berendt, Bernst. befindl. organ. reste vorw., ii, th. i: 113. *Pl.* 7, *fig.* 9.
1864. " Phryg. synopsis synom., 77.
1864. " Verhandl. zool.-bot. gesellsch. Wien, xiv: 875.

See also Phryganeolitha vetusta, etc.

2881. Polycentropus xanthocoma. (Hydropsychidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1854. Pictet. Traité de paléont., 2^{e} éd., ii: 376 (undescr.)
1856. " Berendt, Bernst. befindl. organ. reste vorw., ii, th. i: 113.
1864. Kollar. Hagen, Phryg. synopsis synom., 77.
1864. " Hagen, Verhandl. zool.-bot. gesellsch. Wien, xiv: 875.

See also Phryganeolitha vetusta, etc.

2882. Potamanthus ——. (Ephemeridæ.)

Locality: Prussian amber. Horizon: Ligurian.

1845. Berendt. Bernst. befindl. organ. reste vorw., i: 57.

2883. Potamanthus priscus. (Ephemeridæ.)

Locality: Prussian amber. Horizon: Ligurian.

1854. Pictet. Hagen, Verhandl. zool.-bot. ver. Wien, iv: 227 (undescr.).
1854. " Traité de paléont., 2^{e} éd., ii: 371 (undescr.) (Pothamanthus).
1856. Pictet-Hagen. Berendt, Bernst. befindl. organ. reste vorw., ii, th. i: 77. *Pl.* 6, *fig.* 3*b*.

See also Leptophlebia prisca.

Pothamanthus priscus. See Potamanthus priscus.

2884. Psocus ——. (Psocina.)

Locality: Prussian amber. Horizon: Ligurian.

1845. Berendt. Bernst. befindl. organ. reste vorw., i: 57.

2885. Psocus ——. (Psocina.)

Locality: Prussian amber. Horizon: Ligurian.

1831. Burmeister. Oken, Isis., 1831: 1100.
1832. " Handb. ent., i: 637.
1836. " Man. ent., 579.

2886. Psocus ——. (Psocina.)

Locality: Prussian amber. Horizon: Ligurian.

1835. Gravenhorst. Uebers. schles. gesellsch. vaterl. cult., 1834: 92.

2887. **Psocus** ———. (Psocina.)

Locality: Sicilian amber. Horizon: ———

1838.	**Guérin.**	Rev. zool., 1838: 170. *Pl.* 1, *fig.* 8.

2888. **Psocus abnormis.** (Psocina.)

Locality: Prussian amber. Horizon: Ligurian.

1854.	**Hagen.**	Verhandl. zool.-bot. ver. Wien, iv: 225 (undescr.).
1856.	"	Berendt, Bernst. befindl. organ. reste vorw., ii, th. i: 61. *Pl.* 8, *figs.* 9*a–c*.

See also Elipsocus abnormis, etc.

2889. **Psocus affinis.** (Psocina.)

Compared with P. nervosus, P. bifasciatus.

Locality: Prussian amber. Horizon: Ligurian.

1854.	**Pictet.**	Hagen, Verhandl. zool.-bot. ver. Wien, iv: 225 (undescr.).
1856.	"	Berendt, Bernst. befindl. organ. reste vorw., ii, th. i: 58. *Pl.* 5, *figs.* 9*b–c*, 12.
1866.	**Hagen.**	Psoc. Emb. synopsis, 12.
1866.	"	Verhandl. zool.-bot. gesellsch. Wien, xvi: 212.
1882.	"	Stett. ent. zeit., xliii: 232–237. *Pl.* 1, *fig.* 1 (22 *figs.*).

2890. **Psocus ciliatus.** (Psocina.)

Compared with P. lasiopterus.

Locality: Prussian amber. Horizon: Ligurian.

1854.	**Pictet.**	Hagen, Verhandl. zool.-bot. ver. Wien, iv: 225 (undescr.).
1856.	"	Berendt, Bernst. befindl. organ. reste vorw., ii, th. i: 59–60. *Pl.* 5, *figs.* 10*b–c*.

See also Epipsocus ciliatus.

2891. **Psocus debilis.** (Psocina.)

Locality: Prussian amber. Horizon: Ligurian.

1854.	**Pictet.**	Hagen, Verhandl. zool.-bot. ver. Wien, iv: 225 (undescr.).
1856.	"	Berendt, Bernst. befindl. organ. reste vorw., ii, th. i: 60. *Pl.* 5, *fig.* 11*b*.

See also Cœcilius debilis, Epipsocus debilis.

2892. **Psocus proavus.** (Psocina.)

Locality: Prussian amber. Horizon: Ligurian.

1854.	**Hagen.**	Verhandl. zool.-bot. ver. Wien, iv: 225 (undescr.).
1856.	"	Berndt, Bernst. befindl. organ. reste vorw., ii, th. i: 59. *Pl.* 5, *fig.* 8*b*; *pl.* 8, *fig.* 7.

See also Cæcilius proavus.

2893. **Psocus tener.** (Psocina.)

Locality: Prussian amber. Horizon: Ligurian.

1854.	**Hagen.**	Verhandl. zool.-bot. ver. Wien, iv: 225 (undescr.).
1856.	"	Berendt, Bernst. befindl. organ. reste vorw., ii, th. i: 60. *Pl.* 8, *fig.* 8.
1882.	"	Stett. ent. zeit., xliii: 225–226.

See also Palæopsocus tener, Epipsocus tener.

Psychomia (several species). See Psychomyia, the same species.

2894. Psychomyia ——. (Hydropsychidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1845. Berendt. Bernst. befindl. organ. reste vorw., i: 57.

2895. Psychomyia lata. (Hydropsychidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1856. Hagen. Berendt, Bernst. befindl. organ. reste vorw., ii, th. i: 119 (Psychomia).

See also Psychomyia sericea, etc.

2896. Psychomyia pallida. (Hydropsychidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1854. Pictet. Traité de paléont., 2e éd., ii: 376 (undescr.) (Psychomia).
1856. " Berendt, Bernst. befindl. organ. reste vorw., ii, th. i: 118 (=P. sericea). *Pl.* 7, *figs.* 19*b–d*.

See also Psychomyia sericea, etc.

2897. Psychomyia sericea. (Hydropsychidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1854. Pictet. Traité de paléont., 2e éd., ii: 376 (undescr.) (Psychomia).
1856. " Berendt, Bernst. befindl. organ. reste vorw., ii, th. i: 118 (Psychomia). *Pl.* 7, *figs.* 19*b–e; pl.* 8, *fig.* 28.
1864. Hagen. Phryg. synopsis synom., 79.
1864. " Verhandl. zool.-bot. gesellsch. Wien, xiv: 877.

See also Psychomyia pallida, P. lata.

2898. Raphidia ——. (Sialina.)

Locality: Prussian amber. Horizon: Ligurian.

1830. Berendt. Insekten im bernstein, 35.

2899. Raphidia —— (larva). (Sialina.)

Locality: Prussian amber. Horizon: Ligurian.

1856. Menge. Berendt, Bernst. befindl. organ. reste vorw., ii, th. i: 83–84. *Pl.* 8, *fig.* 31.

2900. Raphidia ——. (Sialina.)

Locality: Florissant, Colo. Horizon: Oligocene.

1881. Scudder. Bull. U. S. geol. surv. terr., vi: 293.
1882. " Proc. Bost. soc. nat. hist., xxi: 407.
1883. " Ann. rep. U. S. geol. surv. terr., xii: 283.

See also Raphidia tranquilla.

2901. Raphidia erigena. (Sialina.)

Locality: Prussian amber. Horizon: Ligurian.

1854. Menge. Hagen, Verhandl. zool.-bot. ver. Wien, iv: 228 (undescr.).

See also Raphidia (Inocellia) erigena.

2902. Raphidia (Inocellia) erigena. (Sialina.)

Locality: Prussian amber. Horizon: Ligurian.

1856. Menge. Berendt, Bernst. befindl. organ. reste vorw., ii, th. i: 83. *Pl.* 8, *fig.* 14.

See also Raphidia erigena.

2903. Raphidia tranquilla. (Sialina.)

Locality: Florissant, Colo. **Horizon**: Oligocene.

1890. Scudder. Tert. ins. N. A., 154–155. *Pl.* 14, *fig.* 2.

See also Raphidia ——— Scudder.

2904. Rhyacophila ———. (Rhyacophilidæ.)

Locality: Prussian amber. **Horizon**: Ligurian.

1845. Berendt. Bernst. befindl. organ. reste vorw., i: 57.

2905. Rhyacophila occulta. (Rhyacophilidæ.)

Locality: Prussian amber. **Horizon**: Ligurian.

1856. Hagen. Berendt, Bernst. befindl. organ. reste vorw., ii, th. i: 120.
1864. " Phryg. synopsis synom., 81.
1864. " Verhandl. zool.-bot. gesellsch. Wien, xiv: 879.

2906. Rhyacophila prisca. (Rhyacophilidæ.)

Locality: Prussian amber. **Horizon**: Ligurian.

1854. Pictet. Traité de paléont., 2e éd., ii: 376 (undescr.).
1856. " Berendt, Bernst, befindl. organ. reste vorw., ii, th. i: 116–117. *Pl.* 7, *fig.* 6.

See also Tinodes prisca.

2907. Rhyacophila subumbrosa. (Rhyacophilidæ.)

Locality: Prussian amber. **Horizon**: Ligurian.

1851. Kolenati. Abhandl. böhm. gesellsch. wiss., (5), vi: 15 (undescr.).

2908. Rhyacophila succinica major. (Rhyacophilidæ.)

Locality: Prussian amber. **Horizon**: Ligurian.

1851. Kolenati. Abhandl. böhm. gesellsch. wiss., (5), vi: 15 (undescr.).

2909. Rhyacophila succinica media. (Rhyacophilidæ.)

Locality: Prussian amber. **Horizon**: Ligurian.

1851. Kolenati. Abhandl. böhm. gesellsch. wiss., (5), vi: 15 (undescr.).

2910. Rhyacophila succinica minor. (Rhyacophilidæ.)

Locality: Prussian amber. **Horizon**: Ligurian.

1851. Kolenati. Abhandl. böhm. gesellsch. wiss., (5), vi: 15 (undescr.).

Rophalis amissa. See Sisyra (Rophalis) amissa.

2911. Rophalis relicta. (Hemerobina.)

Locality: Prussian amber. **Horizon**: Ligurian.

1842. Erichson. MSS.; cf. Hagen in Berendt, Bernst. befindl. organ. reste vorw., ii, th. i: 87.
1854. Pictet. Traité de paléont., 2e éd., ii: 378 (undescr.).
1866. Hagen. Stett. ent. zeit., xxvii: 459.

See also Sisyra relicta, S. (Rophalis) relicta.

2912. Semblis ———. (Sialina.)

Locality: Prussian amber. **Horizon**: Ligurian.

1832. Burmeister. Handb. ent., i: 637.
1836. " Man. ent., 578.

2913. Semblis ——. (Sialina.)

Locality: Prussian amber. Horizon: Ligurian.

1835. Gravenhorst. Uebers. schles. gesellsch. vaterl. cult., 1834: 92.

2914. Sericostomum ——. (Sericostomidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1854. Hagen. Verhandl. zool.-bot. ver. Wien, iv: 229.
1856. " Berendt, Bernst. befindl. organ. reste vorw., ii, th. i: 107.

2915. Sericostomum hyalinum. (Sericostomidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1854. Hagen. Verhandl. zool.-bot. ver. Wien, iv: 229 (undescr.).
1856. " Berendt, Bernst. befindl. organ. reste vorw., ii, th. i: 106–107.

2916. Setodes abbreviata. (Leptoceridæ.)

Locality: Florissant, Colo. Horizon: Oligocene.

1890. Scudder. Tert. ins. N. A., 192.

2917. Setodes portionalis. (Leptoceridæ.)

Locality: Florissant, Colo. Horizon: Oligocene.

1890. Scudder. Tert. ins. N. A., 191–192. *Pl.* 15, *fig.* 15.

2918. Sisyra ——. (Hemerobina.)

Locality: Prussian amber. Horizon: Ligurian.

1845. Berendt. Bernst. befindl. organ. reste vorw., i: 57.

2919. Sisyra amissa. (Hemerobina.)

Locality: Prussian amber. Horizon: Ligurian.

1854. Hagen. Verhandl. zool.-bot. ver. Wien, iv: 228.
1866. " Stett. ent. zeit., xxvii: 460.

See also Sisyra (Rophalis) amissa.

2920. Sisyra (Rophalis) amissa. (Hemerobina.)

Locality: Prussian amber. Horizon: Ligurian.

1856. Hagen. Berendt, Bernst. befindl. organ. reste vorw., ii, th. i: 87–88. *Pl.* 8, *fig.* 20.

See also Sisyra amissa.

2921. Sisyra relicta. (Hemerobina.)

Locality: Prussian amber. Horizon: Ligurian.

1854. Hagen. Verhandl. zool.-bot. ver. Wien, iv: 228 (undescr.).
1866. " Stett. ent. zeit., xxvii: 460.

See also Rophalis relicta, etc.

2922. Sisyra (Rophalis) relicta. (Hemerobina.)

Compared with S. fuscata.

Locality: Prussian amber. Horizon: Ligurian.

1856. Hagen. Berendt, Bernst. befindl. organ. reste vorw., ii, th. i: 87. *Pl.* 7, *figs.* 25*b–f*; *pl.* 8, *fig.* 19.

See also Rophalis relicta, etc.

2923. Smynthurus ———. (Thysanura.)

Locality: Prussian amber. Horizon: Ligurian.

1845. Berendt. Bernst. befindl. organ. reste vorw., i: 56.

2924. Smynthurus brevicornis. (Thysanura.)

Locality: Prussian amber. Horizon: Ligurian.

1845. Koch-Berendt. Jahrb. min., 1845: 873.
1854. " Bernst. befindl. organ. reste vorw., i, th. ii: 121. *Pl.* 15, *fig.* 131.
1856. Giebel. Insect. d. vorwelt, 329.

2925. Smynthurus longicornis. (Thysanura.)

Locality: Prussian amber. Horizon: Ligurian.

1845. Koch-Berendt. Jahrb. min., 1845: 873.
1854. " Bernst. befindl. organ. reste vorw., i, th. ii: 121. *Pl.* 15, *fig.* 130.
1856. Giebel. Insect. d. vorwelt, 329.

2926. Smynthurus ovatulus. (Thysanura.)

Locality: Prussian amber. Horizon: Ligurian.

1845. Koch-Berendt. Jahrb. min., 1845: 872.
1854. " Bernst. befindl. organ. reste vorw., i, th. ii: 121–122. *Pl.* 15, *fig.* 132.
1856. Giebel. Insect. d. vorwelt, 329.

2927. Sphæropsocus künowi. (Psocina.)

Locality: Prussian amber. Horizon: Ligurian.

1882. Hagen. Stett. ent. zeit., xliii: 226–231, 300. *Pl.* 2, *figs.* 1$^{1-14}$.
1883. " Stett. ent. zeit., xliv: 320.
1885. Scudder. Zittel, Handb. palaeont., i, th. ii: 773. *Fig.* 975.
1886. " Zittel-Barrois, Traité de paléont., ii: 773. *Fig.* 992.

2928. Sterope parthenope. (Odonata.)

Locality: Oeningen, Baden. Horizon: Tortonian.

1850. Hagen. Rev. Odon. (Mém soc. roy. sc. Liége, vi): 358.
See also Agrion (Sterope) parthenope, etc.

2929. Suphalasca proavus. (Hemerobina.)

Locality: Stösschen, Austria. Horizon: Aquitanian.

1866. Hagen. Stett. ent. zeit., xxvii: 461.
See also Ascalaphus proavus.

2930. Sympycna parthenoe. (Odonata.)

Locality: Oeningen, Baden. Horizon: Tortonian.

1890. Scudder. Tert. ins. N. A., 127.
See also Agrion (Sterope) parthenoe, etc.

2931. Tæniopteryx ———. (Perlina.)

Locality: Prussian amber. Horizon: Ligurian.

1845. Berendt. Bernst. befindl. organ. reste vorw., i: 57 (Tænioptrix).

2932. Tæniopteryx ciliata. (Perlina.)

Locality: Prussian amber. Horizon: Ligurian.

1854. Pictet. Hagen, Verhandl. zool.-bot. ver. Wien, iv: 226 (undescr.).
1856. " Berendt, Bernst. befindl. organ. reste vorw., ii, th. i: 68. *Pl.* 6, *figs.* 89*b*–*g*.

See also Nemoura (Tæniopteryx) ciliata.

2933. Tæniopteryx elongata. (Perlina.)

Locality: Prussian amber. Horizon: Ligurian.

1854. Hagen. Verhandl. zool.-bot. ver. Wien, iv: 226 (undescr.).
1856. " Berendt, Bernst. befindl. organ. reste vorw., ii, th. i: 68–69. *Pl.* 8, *fig.* 4.

Tænioptrix ———. See Tæniopteryx ———.

2934. Termes ———. (Termitina.)

Locality: Prussian amber. Horizon: Ligurian.

1845. Berendt. Bernst. befindl. organ. reste vorw., i: 57.

2935. Termes ———. (Termitina.)

Locality: Prussian amber. Horizon: Ligurian.

1831. Burmeister. Oken, Isis, 1831: 1100.

2936. Termes ———. (Termitina.)

Locality: Brunstatt, Alsatia. Horizon: Middle Oligocene.

1888. Foerster. Mitth. comm. geol. Elsass-Lothr., i: 164.
1889. " Mitth. comm. geol. Elsass-Lothr., ii: 103.

2937. Termes ———. (Termitina.)

Locality: Prussian amber. Horizon: Ligurian.

1825. Guérin. Dict. class. d'hist. nat., viii: 580.

2938. Termes ———. (Termitina.)

Locality: Prussian amber. Horizon: Ligurian.

1838. Ouchakoff. Bull. soc. imp. Mosc., 1838: 37–42. *Pl.* 1, *figs.* 1–2.
1840. " Ann. sc. nat., (2), xiii: 204–207. *Pl.* 1, *fig. B.*
1842. " Calc. journ. nat. hist., ii: 74–78.
1854. Hagen. Verhandl. zool.-bot. ver. Wien, iv: 224 (= ? Eutermes antiquus).
1856. " Berendt, Bernst. befindl. organ. reste vorw., ii, th. i: 55 (= ? Termes antiquus).

See also Termes antiquus, etc.

2939. Termes ———. (Termitina.)

Locality: Prussian amber. Horizon: Ligurian.

1820. Schlotheim. Petrefactenk., 43.

2940. Termes ———. (Termitina.)

Locality: Prussian amber. Horizon: Ligurian.

1868. Smith. Quart. journ. sc., v: 184. *Pl.*, *fig.* 9.

2941. Termes ——. (Termitina.)

Locality: Gurnet Bay, Isle of Wight. **Horizon:** Bembridge Limestone.

1879. Woodward. Quart. journ. geol. soc. Lond., xxxv: 344.
1879. " Geol. mag., (n. s.), v: 89.

2942. Termes (Calotermes) affinis. (Termitina.)

Locality: Prussian amber. **Horizon:** Ligurian.

1856. Hagen. Berendt, Bernst. befindl. organ. reste vorw., ii, th. i: 50–51 (Kalotermes). *Pl.* 5, *figs.* 5*b–e*.

See also Termes obscurus, T. (Eutermes) obscurus (1), T. girardi, T. (Termopsis) girardi; also I, NEUROPT., Termes (Calotermes) affinis, Calotermes affinis.

2943. Termes antiquus. (Termitina.)

Locality: Prussian amber. **Horizon:** Ligurian.

1858. Hagen. Catal. Neuropt. Brit. mus., 24–25.
1858. " Linn. entom., xii: 180–181.
1860. " Linn. entom., xiv: 107.

See also Termes —— Ouchakoff, T. (Eutermes) antiquus, Hemerobites antiquus, Maresa plebeja, Termes gracilis.

2944. Termes (Eutermes) antiquus. (Termitina.)

Locality: Prussian amber. **Horizon:** Ligurian.

1742. Sendel. Hist. succ., 30 (unnamed). *Pl.* 1, *fig.* 5.
1856. Hagen. Berendt, Bernst. befindl. organ. reste vorw., ii, th. i: 54–55. *Pl.* 5, *figs.* 6*b–i*.
1856. Giebel. Insect. d. vorwelt, 296–297.
1860. Hagen. Linn. entom., xii: 297 (not Germar's Hemerobites antiquus, as Giebel thought).

See also Termes antiquus, etc.

2945. Termes berendtii. (Termitina.)

Locality: Prussian amber. **Horizon:** Ligurian.

1854. Pictet. Traité de paléont., 2^e^ éd., ii: 370 (undescr.).
1856. " Berendt, Bernst. befindl. organ. reste vorw., ii, th. i: 49–50. *Pl.* 5, *figs.* 2*b–e*.

See also Calotermes berendtii, Termes (Calotermes) berendtii.

2946. Termes (Calotermes) berendtii. (Termitina.)

Locality: Prussian amber. **Horizon:** Ligurian.

1854. Hagen. Berendt, Bernst. befindl. organ. reste vorw., ii, th. i: 49 (Kalotermes).

See also Termes berendtii, etc.

2947. Termes bremii. (Termitina.)

Locality: Prussian amber. **Horizon:** Ligurian.

1852. Giebel. Deutschl. petref., 638 (bremi).

See also T. (Termopsis) bremii, etc.

2948. Termes (Termopsis) bremii. (Termitina.)

Locality: Prussian amber. **Horizon:** Ligurian.

1849. Heer. Insektenf. tertiärg. Oeningen, ii: 31–32. *Pl.* 3, *fig.* 2.
1852. Giebel. Deutschl. petref., 638.

1856. Giebel. Insect. d. vorwelt, 294.
1856. Hagen. Berendt, Bernst. befindl. organ. reste vorw., ii, th. i: 51-53. *Pl.* 5, *figs.* 3*b–e*.
See also Termes pictetii, T. granulicollis, T. bremii, Termopsis bremii.

2949. Termes büchii. (Termitina.)

Compared with T. lucifugus Latr.

Locality: Oeningen, Baden. Horizon: Tortonian.

1865. Heer. Urwelt der Schweiz, 360, 368.
1872. " Monde prim. Suisse, 442, 451.
1876. " Prim. world Switz., ii: 14, 22.
1879. " Urwelt der Schweiz, 2^{e} aufl., 386, 393.

2950. Termes croaticus. (Termitina.)

Locality: Radoboj, Croatia. Horizon: Mayencian.

1852. Giebel. Deutschl. petref., 638.
See also Termes (Eutermes) croaticus.

Termes (Entermes) croaticus. See Termes (Eutermes) croaticus.

2951. Termes (Eutermes) croaticus. (Termitina.)

Locality: Radoboj, Croatia. Horizon: Mayencian.

1849. Heer. Insektenf. tertiärg. Oeningen, ii; 34. *Pl.* 3, *fig.* 5.
1852. Giebel. Deutschl. petref., 638.
1856. " Insect. d. vorwelt, 295.
1858. Hagen. Linn. entom., xii: 205.
1858. " Catal. Neuropt. Brit. mus., 28 (Entermes).
See also Termes croaticus.

2952. Termes debilis. (Termitina.)

Locality: Prussian amber. Horizon: Ligurian.

1852. Giebel. Deutschl. petref., 638.
See also Termes (Eutermes) debilis.

2953. Termes (Eutermes) debilis. (Termitina.)

Locality: Prussian amber (Heer); Copal (Hagen). Horizon: Ligurian (Heer); Recent (Hagen).

1849. Heer. Insektenf. tertiärg. Oeningen, ii: 35. *Pl.* 3, *fig.* 6.
1856. Giebel. Insect. d. vorwelt, 295.
1856. Hagen. Berendt, Bernst. befindl. organ. reste. vorw., ii, th. i: 48.
See also Termes debilis.

2954. Termes (Termopsis) deciduus. (Termitina.)

Locality: Prussian amber. Horizon: Ligurian.

1856. Hagen. Berendt, Bernst. befindl. organ. reste vorw., ii, th. i: 52–53.
See also Termopsis decidua.

2955. Termes (Eutermes) diaphanus. (Termitina.)

Locality: Prussian amber. Horizon: Ligurian.

1856. Giebel. Insect. d. vorwelt, 296.
1860. Hagen. Linn. entom., xii: 297 (=T. pusillus).
See also Termes pusillus, etc.

2956. Termes girardi. (Termitina.)

Locality: Prussian amber. Horizon: Ligurian.

1888. Schlechtend. Zeitschr. ges. naturw., lxi: 491.
See also Termes (Calotermes) affinis, etc.

2957. Termes (Termopsis) girardi. (Termitina.)

Locality: Prussian amber. Horizon: Ligurian.

1856. Giebel. Insect. d. vorwelt, 294.
1860. Hagen. Linn. entom., xii: 297 (=T. affinis).
See also Termes (Calotermes) affinis, etc.

2958. Termes gracilicornis. (Termitina.)

Locality: Prussian amber. Horizon: Ligurian.

1856. Pictet. Berendt, Bernst. befindl. organ. reste vorw., ii, th. i: 53–54. *Pl.* 5, *figs.* 4*b–d.*
See also Termes (Termopsis) gracilicornis, Termopsis gracilicornis.

2959. Termes (Termopsis) gracilicornis. (Termitina.)

Locality: Prussian amber. Horizon: Ligurian.

1854. Pictet. Traité de paléont., 2e éd., ii: 370 (undescr.).
1856. Hagen. Berendt, Bernst. befindl. organ. reste vorw., ii, th. i: 53–54. *Pl.* 5, *figs.* 4, 9*b–d.*
See also Termes gracilicornis, etc.

2960. Termes gracilis. (Termitina.)

Locality: Prussian amber. Horizon: Ligurian.

1854. Pictet. Traité de paléont., 2e éd., ii: 370 (undescr.).
1856. " Berendt, Bernst. befindl. organ. reste vorw., ii, th. i: 54–55, 124. *Pl.* 5, *figs.* 6*b–i.*
See also Termes antiquus, etc.

2961. Termes granulicollis. (Termitina.)

Locality: Prussian amber. Horizon: Ligurian.

1854. Pictet. Traité de paléont., 2e éd., ii: 370 (undescr.).
1856. " Berendt, Bernst. befindl. organ. reste vorw., ii, th. i: 51.
See also Termes (Termopsis) bremii, etc.

2962. Termes haidingeri. (Termitina.)

Locality: Radoboj, Croatia. Horizon: Mayencian.

1849. Heer. Haidinger, Berichte, v: 87.
1852. Giebel. Deutschl. petref., 638.
See also Termes (Termopsis) haidingeri, etc.

2963. Termes (Termopsis) haidingeri. (Termitina.)

Locality: Radoboj, Croatia. Horizon: Mayencian.

1849. Heer. Insektenf. tertiärg. Oeningen, ii: 26–28.
1852. Giebel. Deutschl. petref., 638.
1854. Goldenberg. Palaeontogr., iv. *Pl.* 5, *fig.* 1.
1854. " Foss. ins. Saarbr. *Pl.* 3, *fig.* 1.
1856. Giebel. Insect. d. vorwelt, 293.
See also Hodotermes haidingeri, Termes haidingeri.

2964. **Termes hartungi.** (Termitina.)

Compared with T. lucifugus Latr.

Localities: Radoboj, Croatia; Oeningen, Baden. Horizon: Mayencian, Tortonian.

1858.	Heer.	Hagen, Linn. entom., xii: 181 (undescr.).
1865.	“	Urwelt der Schweiz, 360, 368. *Fig.* 230, on *p.* 366.
1872.	“	Monde prim. Suisse, 442, 451. *Fig.* 230, on *p.* 449.
1876.	“	Prim. world Switz., ii: 14, 22. *Fig.* 230.
1879.	“	Urwelt der Schweiz, 2e aufl., 386, 393. *Fig.* 271, on *p.* 392.

2965. **Termes hassencampi.** (Termitina.)

Locality: Sieblos, Rhenish Prussia. Horizon: Aquitanian.

1860.	Heer.	Hassencamp, Würzb. naturw. zeitschr., i: 79 (undescr.).

2966. **Termes insignis.** (Termitina.)

Compared with T. fatalis L.

Locality: Oeningen, Baden. Horizon: Tortonian.

1852.	Giebel.	Deutschl. petref., 638.
1865.	Heer.	Urwelt der Schweiz, 367.
1872.	“	Monde prim. Suisse, 451.
1876.	“	Prim. world Switz., ii: 22.
1879.	“	Urwelt der Schweiz, 2e aufl., 393.

See also Termes (Termopsis) insignis, etc.

2967. **Termes (Termopsis) insignis.** (Termitina.)

Locality: Oeningen, Baden. Horizon: Tortonian.

1849.	Heer.	Insektenf. tertiärg. Oeningen, ii: 29–31. *Pl.* 3, *fig.* 1.
1852.	Giebel.	Deutschl. petref., 638.

See also Hodotermes insignis, Termes insignis.

2968. **Termes (Eutermes) mœstus.** (Termitina.)

Locality: Prussian amber. Horizon: Ligurian.

1856.	Giebel.	Insect. d. vorwelt, 497.

See also Termes (Eutermes) obscurus (2).

2969. **Termes obscurus.** (Termitina.)

Locality: Radoboj, Croatia. Horizon: Mayencian.

1852.	Giebel.	Deutschl. petref., 638.
1854.	Pictet.	Traité de paléont., 2e éd., ii: 370 (undescr.).
1856.	“	Berendt, Bernst. befindl. organ. reste vorw., ii, th. i: 50–51. *Pl.* 5, *figs.* 3*b*–*e*.

See also Termes (Calotermes) affinis, etc.

Termes (Entermes) obscurus. See Termes (Eutermes) obscurus (1).

2970. **Termes (Eutermes) obscurus (1).** (Termitina.)

Locality: Radoboj, Croatia. Horizon: Mayencian.

1849.	Heer.	Insektenf. tertiärg. Oeningen, ii: 33–34. *Pl.* 3, *fig.* 4.
1858.	Hagen.	Linn. entom., xii: 204–205.
1858.	“	Catal. Neuropt. Brit. mus., 28 (Entermes).

See also Termes (Calotermes) affinis, etc.

2971. Termes (Eutermes) obscurus (2). (Termitina.)

Locality: Prussian amber. Horizon: Ligurian.

1856. Giebel. Insect. d. vorwelt, 297.
1858. Hagen. Linn. entom., xii: 205, 297.

See also Termes (Eutermes) mœstus.

2972. Termes peccanæ. (Termitina.)

Locality: Monte Bolca, Italy. Horizon: Ligurian.

1856. Massalongo. Stud. paleont., 19. *Pl.* 2, *figs.* 5, 6.
1886. Omboni. Atti r. ist. Ven., (6), iv: 1426 (peccanœ). *Pl.* 2, *fig.* 7.
1886. " Ins. foss. ven., 6. *Pl.* 2, *fig.* 7.

Termes peccanœ. See Termes peccanæ.

2973. Termes pictetii. (Termitina.)

Locality: Prussian amber. Horizon: Ligurian.

1854. Berendt. MSS.
1854. Pictet. Traité de paléont., 2e éd., ii: 370. *Pl.* 40, *figs.* 23, 23*a*.
1856. Berendt. Bernst. befindl. organ. reste vorw., ii, th. i: 51–53. *Pl.* 5, *figs.* 3*b*–*e*.

See also Termes (Termopsis) bremii, etc.

2974. Termes pristinus. (Termitina.)

Locality: Radoboj, Croatia. Horizon: Mayencian.

1843. Charpentier. Verhandl. leop.-carol. akad. naturf., xx: 409–410. *Pl.* 23, *figs.* 2–4.
1847. Unger. Chloris protogæa, 134–135 (without specific name). *Pl.* 44, *fig.* 1.
1849. Heer. Insektenf. tertiärg. Oeningen, ii; 33, note.
1852. Giebel. Deutschl. petref., 638.
1858. Hagen. Linn. entom., xii: 161–162.
1858. " Catal. Neuropt. Brit. mus., 22.

See also Termes (Eutermes) pristinus, T. procerus, T. (Termopsis) procerus, Hodotermes procerus.

2975. Termes (Eutermes) pristinus. (Termitina.)

Locality: Radoboj, Croatia. Horizon: Mayencian.

1849. Heer. Insektenf. tertiärg. Oeningen, ii: 32–33. *Pl.* 3, *fig.* 3.
1856. Giebel. Insect. d. vorwelt, 294–295.

See also Termes pristinus, etc.

2976. Termes procerus. (Termitina.)

Locality: Radoboj, Croatia. Horizon: Mayencian.

1852. Giebel. Deutschl. petref., 638.

See also Termes pristinus, etc.

2977. Termes (Termopsis) procerus. (Termitina.)

Locality: Radoboj, Croatia. Horizon: Mayencian.

1849. Heer. Insektenf. tertiärg. Oeningen, ii: 23–26. *Pl.* 2, *fig.* 5.
1856. Giebel. Insect. d. vorwelt, 292–293.

See also Termes pristinus, etc.

2978. Termes pusillus. (Termitina.)

Locality: Prussian amber. Horizon: Ligurian.

1852. Giebel. Deutschl. petref., 638.
See also Termes (Eutermes) pusillus, T. diaphanus, T. (E.) punctatus.

2979. Termes (Eutermes) pusillus. (Termitina.)

Localities: Prussian amber (Heer); Copal (Hagen). Horizon: Ligurian (Heer); Recent (Hagen).

1849. Heer. Insektenf. tertiärg. Oeningen, ii: 35–36. *Pl.* 3, *fig.* 7.
1856. Giebel. Insect. d. vorwelt, 295.
1856. Hagen. Berendt, Bernst. befindl. organ. reste vorw., ii, th. i: 48.
See also Termes pusillus, etc.

2980. Termes (Eutermes) punctatus. (Termitina.)

Locality: Prussian amber. Horizon: Ligurian.

1856. Giebel. Insect. d. vorwelt, 296.
1860. Hagen. Linn. entom., xii: 297 (=?T. pusillus).
See also Termes pusillus, etc.

2981. Termes spectabilis. (Termitina.)

Compared with T. fatalis L.

Locality: Oeningen, Baden. Horizon: Tortonian.

1852. Giebel. Deutschl. petref., 638.
1865. Heer. Urwelt der Schweiz, 367.
1872. " Monde prim. Suisse, 451.
1876. " Prim. world Switz., ii: 22.
1879. " Urwelt der Schweiz, 2e aufl., 393.
See also Termes (Termopsis) spectabilis, etc.

2982. Termes (Termopsis) spectabilis. (Termitina.)

Locality: Oeningen, Baden. Horizon: Tortonian.

1849. Heer. Insektenf. tertiärg. Oeningen, ii: 28–29. *Pl.* 2, *fig.* 6.
1856. Giebel. Insect. d. vorwelt, 293.
See also Hodotermes spectabilis, Termes spectabilis.

2983. Termopsis bremii. (Termitina.)

Locality: Prussian amber. Horizon: Ligurian.

1854. Hagen. Verhandl. zool.-bot. ver. Wien, iv: 222.
1858. " Linn. entom., xii: 78–80.
1858. " Catal. Neuropt. Brit. mus., 12.
1860. " Linn. entom., xiv: 102.
See also Termes (Termopsis) bremii, etc.

2984. Termopsis decidua. (Termitina.)

Locality: Prussian amber. Horizon: Ligurian.

1858. Hagen. Linn. entom., xii: 80–81 (deciduus.)
1858. " Catal. Neuropt. Brit. mus., 13.
See also Termes (Termopsis) deciduus.

Termopsis girardi. See Termes (Termopsis) girardi.

2985. **Termopsis gracilicornis.** (Termitina.)

Locality: Prussian amber. Horizon: Ligurian.

1854. Hagen. Verhandl. zool.-bot. ver. Wien, iv: 222 (undescr.).
1858. " Linn. entom., xii: 80.
1858. " Catal. Neuropt. Brit. mus., 12–13.
See also Termes gracilicornis, etc.

Termopsis haidingeri. See Termes (Termopsis) haidingeri.

2986. **Termopsis heeriana.** (Termitina.)

Locality: Schossnitz, Silesia. Horizon: Miocene.

1855. Göppert. Tert. flora Schossnitz. *Pl.* 26, *fig.* 53.
See also Termopsis heerii, Hodotermes heerianus.

2987. **Termopsis heerii.** (Termitina.)

Locality: Schossnitz, Silesia. Horizon: Miocene.

1855. Göppert. Tert. flora Schossnitz, p. vii.
See also Termopsis heeriana, Hodotermes heerianus.

Termopsis insignis. See Termes (Termopsis) insignis.

Termopsis procera. See Termes (Termopsis) procerus.

Termopsis spectabilis. See Termes (Termopsis) spectabilis.

2988. **Tinodes grossa.** (Hydropsychidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1856. Hagen. Berendt, Bernst. befindl. organ. reste vorw., ii, th. i: 117.
1864. " Phryg. synopsis synom., 89.
1864. " Verhandl. zool.-bot. gesellsch. Wien, xiv: 887.

2989. **Tinodes paludigina.** (Hydropsychidæ.)

Locality: Florissant, Colo. Horizon: Oligocene.

1890. Scudder. Tert. ins. N. A., 190–191. *Pl.* 15, *fig.* 9.

2990. **Tinodes prisca.** (Hydropsychidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1856. Hagen. Berendt, Bernst. befindl. organ. reste vorw., ii, th. i: 117. *Pl.* 7, *figs.* 6*b–d*; *pl.* 8, *fig.* 29.
1864. " Phryg. synopsis synom., 90.
1864. " Verhandl. zool.-bot. gesellsch. Wien, xiv: 888.
See also Rhyacophila prisca.

2991. **Tribochrysa** ——— (3 sp.). (Hemerobina.)

Locality: Florissant. Colo. Horizon: Oligocene.

1882. Scudder. Proc. Bost. soc. nat. hist., xxi: 408.
1883. " Ann. rep. U. S. geol. surv. terr., xii: 283.
See also Chrysopa (vic.) ———, Nothochrysa ———, Nymphon (vic.) ———, and the following species.

2992. **Tribochrysa firmata.** (Hemerobina.)

Locality: Florissant, Colo. Horizon: Oligocene.

1890. Scudder. Tert. ins. N. A., 172. *Pl.* 14, *figs.* 6, 7, 10, 11.
See also Tribochrysa ———.

2993. Tribochrysa inequalis. (Hemerobina.)

Locality: Florissant, Colo. **Horizon:** Oligocene.

1885. Scudder. Zittel, Handb. palaeont., i, th. ii: 777. *Fig.* 982.
1886. " Zittel-Barrois, Traité de paléont., ii: 777. *Fig.* 999.
1890. " Tert. ins. N. A., 170–171.

See also Tribochrysa ———.

2994. Tribochrysa vetuscula. (Hemerobina.)

Locality: Florissant, Colo. **Horizon:** Oligocene.

1890. Scudder. Tert. ins. N. A., 170. *Pl.* 14, *fig.* 9.

See also Tribochrysa ———.

2995. Trichostomum proavum. (Sericostomidæ.)

Locality: Prussian amber. **Horizon:** Ligurian.

1854. Hagen. Verhandl. zool.-bot. ver. Wien, iv: 229 (undescr.).
1856. " Berendt, Bernst. befindl. organ. reste vorw., ii, th. i: 103. *Pl.* 8, *fig.* 25.

See also Gœra proava.

2996. Troctes succinicus. (Psocina.)

Locality: Prussian amber. **Horizon:** Ligurian.

1883. Kolbe. Stett. ent. zeit., xliv: 190.

See also Atropos succinea.

HEMIPTERA.

2997. ——— ———.

Locality: [Sinigaglia ?], Italy. **Horizon:** ———.

1841. Bassi. Atti reun. scienz. ital., iii: 401.

2998. ——— ———. ("Baumwanze.")

Locality: Brunstatt, Alsatia. **Horizon:** Middle Oligocene.

1885. Foerster. Tagebl. versamml. deutsch. naturforsch., lviii: 392.
1885. " Mitth. ober-elsäss. tertiär., 7.
1888. " Mitth. comm. geol. Elsass-Lothr., i: 164.

2999. ——— ——— (10 sp.).

Locality: Brunstatt, Alsatia. **Horizon:** Middle Oligocene.

1889. Foerster. Mitth. comm. geol. Elsass-Lothr., ii: 102.

3000. ——— ———.

Locality: Sinigaglia, Italy. **Horizon:** Helvetian ?.

1842. Procaccini. Nuov. ann. sc. nat., vii: 449.

3001. ——— ——— (several). ("Water-bugs.")

Locality: Florissant, Colo. **Horizon:** Oligocene.

1881. Scudder. Bull. U. S. geol. surv. terr., vi: 292.
1883. " Ann. rep. U. S. geol. surv. terr., xii: 282.

3002. ——— ———.

Locality: Gurnet Bay, Isle of Wight. **Horizon:** Bembridge Limestone.

1879. Woodward. Quart. journ. geol. soc. Lond., xxxv: 344.
1879. " Geol. mag. (n. s.), v: 88.

3003. ——— ———. (Aphides ?.)

Locality: British Columbia. Horizon: ———.

1879. Scudder. Rep. progr. geol. surv. Can., 1877–'78: 186B.
1879. " Ins. tert. Nicola, 11.

3004. ——— ——— (several). (Aphides-Aphidinæ.)

Locality: Florissant, Colo. Horizon: Oligocene.

1881. Scudder. Bull. U. S. geol. surv. terr., vi: 293.
1883. " Ann. rep. U. S. geol. surv. terr., xii: 282.

3005. ——— ———. (Aphides-Schizoneurinæ.)

Locality: Florissant, Colo. Horizon: Oligocene.

1881. Scudder. Bull. U. S. geol. surv. terr., vi: 293.
1883. " Ann. rep. U. S. geol. surv. terr., xii: 282.

3006. ——— ——— (2 sp.). (Aradidæ.)

Locality: Florissant, Colo. Horizon: Oligocene.

1881. Scudder. Bull. U. S. geol. surv. terr., vi: 292.
1883. " Ann. rep. U. S. geol. surv. terr., xii: 282.

3007. ——— ——— (several). (Cercopidæ.)

Locality: Florissant, Colo. Horizon: Oligocene.

1881. Scudder. Bull. U. S. geol. surv. terr., vi: 292.
1883. " Ann. rep. U. S. geol. surv. terr., xii: 282.

3008. ——— ———. ("Cicadariæ.")

Locality: Rouffach, Alsatia. Horizon: Tongrian.

1881. Bleicher. Bull. soc. géol. Fr., (3), viii: 226.

3009. ——— ——— (2 sp.). ("Cicadellidæ.")

Locality: Brunstatt, Alsatia. Horizon: Middle Oligocene.

1889. Foerster. Mitth. comm. geol. Elsass-Lothr., ii: 102.

3010. ——— ———. ("Cimicidæ.")

Locality: (Italy ?). Horizon: ———.

1796. ———. Ittiol. veron., i: 31.

3011. ——— ——— (9 sp.). ("Cimicidæ.")

Locality: Brunstatt, Alsatia. Horizon: Middle Oligocene.

1889. Foerster. Mitth. comm. geol. Elsass-Lothr., ii: 102.

3012. ——— ——— (1 or 2). (Coreidæ-Alydina.)

Locality: Florissant, Colo. Horizon: Oligocene.

1881. Scudder. Bull. U. S. geol. surv. terr., vi: 292.
1883. " Ann. rep. U. S. geol. surv. terr., xii: 282.

3013. ——— ——— (2 sp.). (Fulgoridæ.)

Locality: Brunstatt, Alsatia. Horizon: Middle Oligocene.

1889. Foerster. Mitth. comm. geol. Elsass-Lothr., ii: 102.

3014. ——— ——— (several). (Fulgoridæ.)

Locality: Florissant, Colo. Horizon: Oligocene.

1881. Scudder. Bull. U. S. geol. surv. terr., vi: 293.
1883. " Ann. rep. U. S. geol. surv. terr., xii: 282.

3015. ——— ——— (Jassides.)

Locality: Brunstatt, Alsatia. Horizon: Middle Oligocene.

1889. Foerster. Mitth. comm. geol. Elsass-Lothr., ii: 102.

3016. ——— ——— (several). (Lygæidæ.)

Locality: Aix, France. Horizon: Ligurian.

1829. Curtis. Edinb. new phil. journ., vii: 296.
1829. " Murchison-Lyell, Tert. form. Aix, 12.

3017. ——— ——— (7 sp.). (Lygæidæ.)

Locality: Brunstatt, Alsatia. Horizon: Middle Oligocene.

1889. Foerster. Mitth. comm. geol. Elsass-Lothr., ii: 102.

3018. ——— ——— (several). (Lygæidæ.)

Locality: Florissant, Colo. Horizon: Oligocene.

1881. Scudder. Bull. U. S. geol. surv. terr., vi: 292.
1883. " Ann. rep. U. S. geol. surv. terr., xii: 282.

3019. ——— ——— (several). (Pentatomidæ.)

Locality: Florissant, Colo. Horizon: Oligocene.

1881. Scudder. Bull. U. S. geol. surv. terr., vi: 292.
1883. " Ann. rep. U. S. geol. surv. terr., xii: 282.

3020. ——— ——— (several). (Pentatomidæ-Corimalænidæ.)

Locality: Florissant, Colo. Horizon: Oligocene.

1881. Scudder. Bull. U. S. geol. surv. terr., vi: 292.
1883. " Ann. rep. U. S. geol. surv. terr., xii: 282.

3021. ——— ——— (8 sp.). (Pentatomidæ-Cydnida.)

Locality: Brunstatt, Alsatia. Horizon: Middle Oligocene.

1889. Foerster. Mitth. comm. geol. Elsass-Lothr., ii: 102.

3022. ——— ——— (Reduviidæ.)

Locality: Brunstatt, Alsatia. Horizon: Middle Oligocene.

1889. Foerster. Mitth. comm. geol. Elsass-Lothr., ii: 102.

3023. ——— ——— (several). (Reduviidæ.)

Locality: Florissant, Colo. Horizon: Oligocene.

1881. Scudder. Bull. U. S. geol. surv. terr., vi: 292.
1883. " Ann. rep. U. S. geol. surv. terr., xii: 282.

3024. **Acanthosoma ?** ——— (Pentatomidæ.)

Locality: Brunstatt, Alsatia. Horizon: Middle Oligocene.

1890. Foerster. In litt.

3025. Acanthosoma livida. (Pentatomidæ.)

Locality: Radoboj, Croatia. Horizon: Mayencian.

1853. Heer. Insektenf. tertiärg. Oeningen, iii: 41–42. *Pl.* 3, *fig.* 6; *pl.* 8, *fig.* 3.
1856 " Ber. oesterreich. litt., 1850–'53: 200..
1856. Giebel. Insect. d. vorwelt, 346.

3026. Acanthosoma maculata. (Pentatomidæ.)

Locality: Radoboj, Croatia. Horizon: Mayencian.

1853. Heer. Insektenf. tertiärg. Oeningen, iii: 42–43. *Pl.* 3, *fig.* 7; *pl.* 8, *fig.* 5.
1855. " Ber. oesterreich. litt., 1850–'53: 200.
1856. Giebel. Insect. d. vorwelt, 346–347.
1885. Scudder. Zittel, Handb. palaeont., i, th. ii: 785. *Fig.* 1003.
1886. " Zittel-Barrois, Traité de paléont., ii: 785. *Fig.* 1020.

3027. Acanthosoma morloti. (Pentatomidæ.)

Locality: Radoboj, Croatia. Horizon: Mayencian.

1853. Heer. Insektenf. tertiärg. Oeningen, iii: 39–41. *Pl.* 3, *fig.* 5; *pl.* 8. *fig.* 4.
1855. " Ber. oesterreich. litt., 1850–'53: 200.
1856. Giebel. Insect. d. vorwelt, 346.

3028. Achrestocoris cinerarius. (Coreidæ.)

Locality: Florissant, Colo. Horizon: Oligocene.

1890. Scudder. Tert. ins. N. A., 413-414. *Pl.* 22, *fig.* 1.

3029. Acocephalus adæ. (Jassides.)

Locality: Green River, Wyo. Horizon: Oligocene.

1878. Scudder. Bull. U. S. geol. surv. terr., iv: 771.
1890. " Tert. ins. N. A., 311. *Pl.* 6, *fig.* 29.

3030. Acocephalus callosus. (Jassides.)

Locality: Florissant, Colo. Horizon: Oligocene.

1890. Scudder. Tert. ins. N. A., 311-312. *Pl.* 19, *fig.* 15.

3031. Acocephalus crassiusculus. (Jassides.)

Locality: Radoboj, Croatia. Horizon: Mayencian.

1853. Heer. Insektenf. tertiärg. Oeningen, iii: 112. *Pl.* 13, *fig.* 2.
1855. " Ber. oesterreich. litt., 1850–'53: 203.
1856. Giebel. Insect. d. vorwelt, 385.

3032. Acocephalus curtulus. (Jassides.)

Locality: Radoboj, Croatia. Horizon: Mayencian.

1853. Heer. Insektenf. tertiärg. Oeningen, iii: 110–112. *Pl.* 13, *fig.* 1.
1855. " Ber. oesterreich. litt., 1850–'53: 203.
1856. Giebel. Insect. d. vorwelt, 384–385.

3033. Ælia obsoleta. (Pentatomidæ.)

Locality: Oeningen, Baden. Horizon: Tortonian.

1853. Heer. Insektenf. tertiärg. Oeningen, iii: 32. *Pl.* 2, *fig.* 9.
1856. Giebel. Insect. d. vorwelt, 343.

See also Pentatoma obsoletum.

3034. Æthus punctulatus. (Pentatomidæ.)

Locality: Green River, Wyo. Horizon: Oligocene.

1878. Scudder. Bull. U. S. geol. surv. terr., iv: 769–770.

See also Stenopelta punctulata.

3035. Ætorhinus ——. (Capsidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1890. Scudder. Tert. ins. N. A., 362.

3036. Agallia abstructa. (Jassides.)

Locality: Florissant, Colo. Horizon: Oligocene.

1890. Scudder. Tert. ins. N. A., 307. *Pl.* 19, *fig.* 5.

3037. Agallia flaccida. (Jassides.)

Locality: Florissant, Colo. Horizon: Oligocene.

1890. Scudder. Tert. ins. N. A., 306. *Pl.* 19, *fig.* 18.

3038. Agallia instabilis. (Jassides.)

Locality: Florissant, Colo. Horizon: Oligocene.

1890. Scudder. Tert. ins. N. A., 306–307. *Pl.* 21, *fig.* 1.

3039. Agallia lewisii. (Jassides.)

Locality: Florissant, Colo. Horizon: Oligocene.

1890. Scudder. Tert. ins. N. A., 305–306. *Pl.* 19, *figs.* 7, 21.

3040. Aleurodes aculeatus. (Coccidæ.)

Compared with A. chelidonii Latr.

Locality: Prussian amber. Horizon: Ligurian.

1856. Menge. Progr. petrischule Danzig, 1856: 18.

3041. Alydus herrichii. (Coreidæ.)

Compared with A. lateralis Germ.

Locality: Oeningen, Baden. Horizon: Tortonian.

1861. Heer. Rech. climat pays tert., 203 (undescr.).

3042. Alydus pristinus. (Coreidæ.)

Compared with A. calcaratus.

Locality: Vic. Bonn, Rhenish Prussia. Horizon: Aquitanian?.

1837. Germar. Fauna insect. Europae, xix: 18. *Pl.* 18.
1852. Giebel. Deutschl. petref., 636.
1856. " Insect. d. vorwelt, 349.

3043. Alydus pulchellus. (Coreidæ.)

Locality: Oeningen, Baden. Horizon: Tortonian.

1853. Heer. Insektenf. tertiärg. Oeningen, iii: 47–49, 128. *Pl.* 4, *fig.* 2; *pl.* 8, *fig.* 9; *pl.* 14, *fig.* 19.
1856. Giebel. Insect. d. vorwelt, 349.

3044. Amalancon lutosus. (Aphides.)

Locality: Florissant, Colo. Horizon: Oligocene.

1890. Scudder. Tert. ins. N. A., 270–271. *Pl.* 18, *fig.* 13.

3045. **Anasa priscoputida.** (Coreidæ.)

Locality: Florissant, Colo. Horizon: Oligocene.

1890. Scudder. Tert. ins. N. A., 412–413. *Pl.* 24, *fig.* 4.

3046. **Anconatus bucktoni.** (Aphides.)

Locality: Florissant, Colo. Horizon: Oligocene.

1890. Scudder. Tert. ins. N. A., 272–273.

3047. **Anconatus dorsuosus.** (Aphides.)

Locality: Florissant, Colo. Horizon: Oligocene.

1883. Buckton. Monogr. Brit. aphid., iv: 177-178. *Pl.* 133, *fig.* 4.
1890. Scudder. Tert. ins. N. A., 272. *Pl.* 18, *fig.* 9.

3048. **Aphana atava.** (Fulgorina.)

Locality: White River, Colo. Horizon: Oligocene.

1877. Scudder. Bull. U. S. geol. surv. terr., iii: 759–760.
1890. " Tert. ins. N. A., 281-282. *Pl.* 5, *figs.* 96, 97.

3049. **Aphana rotundipennis.** (Fulgorina.)

Locality: Green River, Wyo. Horizon: Oligocene.

1878. Scudder. Bull. U. S. geol. surv. terr., iv: 772.
1890. " Tert. ins. N. A., 282. *Pl.* 6, *fig.* 27.

3050. **Aphantaphis exsuca.** (Aphides.)

Locality: Florissant, Colo. Horizon: Oligocene.

1890. Scudder. Tert. ins. N. A., 254.

3051. **Aphidioides succifera.** (Aphides.)

Compared with Aphis pinophila.

Locality: Prussian amber. Horizon: Ligurian.

1856. Motschulsky. Étud. entom., v: 29. *Pl., fig.* 8.
1883. Buckton. Monogr. Brit. aphid., iv: 164 (Aphioides). *Pl.* 132, *fig.* 7.

3052. **Aphidopsis** ———. (Aphides.)

Locality: Florissant, Colo. Horizon: Oligocene.

1890. Scudder. Tert. ins. N. A., 266. *Pl.* 18, *fig.* 11.

3053. **Aphidopsis dalli.** (Aphides.)

Locality: Florissant, Colo. Horizon: Oligocene.

1890. Scudder. Tert. ins. N. A., 264–265.

3054. **Aphidopsis emaciata.** (Aphides.)

Locality: Florissant, Colo. Horizon: Oligocene.

1890. Scudder. Tert. ins. N. A., 265.

3055. **Aphidopsis hargeri.** (Aphides.)

Locality: Florissant, Colo. Horizon: Oligocene.

1890. Scudder. Tert. ins. N. A., 262–263.

3056. **Aphidopsis lutaria.** (Aphides.)

Locality: Florissant, Colo. Horizon: Oligocene.

1890. Scudder. Tert. ins. N. A., 263.

3057. Aphidopsis margarum. (Aphides.)

Locality: Florissant, Colo. Horizon: Oligocene.

1890. Scudder. Tert. ins. N. A., 264. *Pl.* 18, *fig.* 8.

3058. Aphidopsis subterna. (Aphides.)

Locality: Florissant, Colo. Horizon: Oligocene.

1890. Scudder. Tert. ins. N. A., 261–262.

Aphioides succifera. See Aphidioides succifera.

3059. Aphis ———. (Aphides.)

Locality: Prussian amber. Horizon: Ligurian.

1845. Berendt. Bernst. befindl. organ. reste vorw., i: 55.

3060. Aphis ———. (Aphides.)

Locality: Aix, France. Horizon: Ligurian.

1829. Curtis. Edinb. new phil. journ., vii: 296.
1829. " Murchison-Lyell, Tert. form. Aix, 12.

3061. Aphis araneiformis. (Aphides.)

Compared with A. pomi.

Locality: Prussian amber. Horizon: Ligurian.

1856. Germ.-Ber. Berendt, Bernst. befindl. organ. reste vorw., ii, th. i: 6. *Pl.* 1, *fig.* 8.
1883. Buckton. Monogr. Brit. aphid., iv: 165. *Pl.* 131, *fig.* 4.

Aphis cimicoides. See Lachnus cimicoides.

3062. Aphis delicatula. (Aphides.)

Locality: Aix, France. Horizon: Ligurian.

1856. Heer. Viert. naturf. gesellsch. Zürich, i: 40. *Pl.* 2, *fig.* 13.
1883. Buckton. Monogr. Brit. aphid., iv: 170. *Pl.* 132, *fig.* 6.

3063. Aphis hirsuta. (Aphides.)

Compared with A. picridis.

Locality: Prussian amber. Horizon: Ligurian.

1856 Germ.-Ber. Berendt, Bernst. befindl. organ. reste vorw., ii, th. i: 6. *Pl.* 1, *fig.* 7.
1883. Buckton. Monogr. Brit. aphid., iv: 166. *Pl.* 131, *fig.* 5.

3064. Aphis largiflua. (Aphides.)

Locality: Prussian amber. Horizon: Ligurian.

1856. Menge. Progr. petrischule Danzig, 1856: 19 (undescr.).

3065. Aphis longicaudata. (Aphides.)

Locality: Ambérieux, France. Horizon: ———.

1853. Millière. Ann. soc. ent. Fr. (5), i: 9–11 (longicaudatus). *Pl.* 3^{II},
1883. Buckton. Monogr. Brit. aphid., descr. pl. cxxxii. *Pl.* 132, *fig.* 1,

3066. Aphis longicornis. (Aphides.)

Locality: Prussian amber. Horizon: Ligurian.

1856. Menge. Progr. petrischule Danzig, 1856: 19.

3067. Aphis macrostyla. (Aphides.)

Locality: Radoboj, Croatia. Horizon: Mayencian.

1853. Heer. Insektenf. tertiärg. Oeningen, iii: 121–122. *Pl.* 15, *fig.* 3.
1855. " Ber. oesterreich. litt., 1850–'53: 203.
1856. Giebel. Insect. d. vorwelt, 389.
1883. Buckton. Monogr. Brit. aphid., iv: 169–170. *Pl.* 132, *fig.* 2.

3068. Aphis morloti. (Aphides.)

Locality: Radoboj, Croatia. Horizon: Mayencian.

1853. Heer. Insektenf. tertiärg. Oeningen, iii: 122–123. *Pl.* 15, *figs.* 5*ab*.
1855. " Ber. oesterreich. litt., 1850–'53: 203.
1856. Giebel. Insect. d. vorwelt, 389.
1883. Buckton. Monogr. Brit. aphid., iv: 171 (morlotti). *Pl.* 132, *fig.* 9.
See also Lachnus ——— Buckton.

Aphis morlotti. See Aphis morloti.

3069. Aphis pallescens. (Aphides.)

Locality: Radoboj, Croatia. Horizon: Mayencian.

1853. Heer. Insektenf. tertiärg. Oeningen, iii: 122. *Pl.* 15, *fig.* 4.
1855. " Ber. oesterreich. litt., 1850–'53: 203.
1856. Giebel. Insect. d. vorwelt, 389.
1883. Buckton. Monogr. Brit. aphid., iv: 170–171. *Pl.* 132, *figs.* 10, 10*a*.

3070. Aphis retrolactens. (Aphides.)

Locality: Prussian amber. Horizon: Ligurian.

1856. Menge. Progr. petrischule Danzig, 19 (undescr.).

3071. Aphis transparens. (Aphides.)

Locality: Prussian amber. Horizon: Ligurian.

1856. Germ.-Ber. Berendt, Bernst. befindl. organ. reste vorw., ii, th. i: 7. *Pl.* 2, *fig.* 1.
1883. Buckton. Monogr. Brit. aphid., iv: 168. *Pl.* 131, *fig.* 10.

3072. Aphrophora ———. (Cercopidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1845. Berendt. Bernst. befindl. organ. reste vorw., i: 55.

3073. Aphrophora ——— (4 sp.). (Cercopidæ.)

Locality: Brunstatt, Alsatia. Horizon: Middle Oligocene.

1890. Foerster. In litt.

3074. Aphrophora ———. (Cercopidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1835. Gravenhorst. Uebers. schles. gesellsch. vaterl. cult., 1834: 93.

3075. Aphrophora ———. (Cercopidæ.)

Locality: Florissant, Colo. Horizon: Oligocene.

1890. Scudder. Tert. ins. N. A., 337. *Pl.* 19, *fig.* 10.

3076. Aphrophora (Ptyelus) carbonaria. (Cercopidæ.)

Compared with A. leucophthalma, Europe.

Locality: Prussian amber. Horizon: Ligurian.

1856. Germ.-Ber. Berendt, Bernst. befindl. organ. reste vorw., ii, th. i: 11-12 (Ptyela). *Pl.* 2, *fig*. 3.

3077. Aphrophora electrina. (Cercopidæ.)

Compared with A. (Ptyela) leucophthalma, Europe.

Locality: Prussian amber. Horizon: Ligurian.

1856. Germ.-Ber. Berendt, Bernst. befindl. organ. reste vorw., ii, th. i: 10-11. *Pl.* 1, *fig*. 15.

3078. Aphrophora molassica. (Cercopidæ.)

Locality: Greith, Hohe Rhonen, Germany. Horizon: Aquitanian.

1853. Heer. Insektenf. tertiärg. Oeningen, iii: 107-109. *Pl.* 12, *fig*. 9.

1856. Giebel Insect. d. vorwelt, 383.

Aphrophora pinguicola. See Aphrophora pinguicula.

3079. Aphrophora pinguicula. (Cercopidæ.)

Locality: Aix, France. Horizon: Ligurian.

1853. Heer. Insektenf. tertiärg. Oeningen, iii: 107. *Pl.* 12, *fig*. 8.

1856. " Viert. naturf. gesellsch. Zürich, i: 39.

1856. Giebel. Insect. d. vorwelt, 383 (pinguicola).

3080. Aphrophora spumarioides. (Cercopidæ.)

Locality: Oeningen, Baden. Horizon: Tortonian.

1853. Heer. Insektenf. tertiärg. Oeningen, iii: 106-107. *Pl.* 12, *fig*. 7.

1856. Giebel. Insect. d. vorwelt, 383.

3081. Aphrophora spumifera. (Cercopidæ.)

Localities: Radoboj, Croatia; Aix, France. Horizon: Mayencian, Ligurian.

1853. Heer. Insektenf. tertiärg. Oeningen, iii: 104-106, 134. *Pl.* 12, *fig*. 6.

1855. " Ber. oesterreich. litt., 1850-'53: 202.

1856. " Viert. naturf. gesellsch. Zürich, i: 39.

1856. Giebel. Insect. d. vorwelt, 383.

See also Tettigonia ——— Curtis, Tettigonia spumaria.

3082. Aphrophora vetusta. (Cercopidæ.)

Compared with Gypona glauca, Brazil.

Locality: Prussian amber. Horizon: Ligurian.

1856. Germ.-Ber. Berendt, Bernst. befindl. organ. reste vorw., ii, th. i: 11. *Pl.* 1, *fig*. 16.

3083. Aporema præstrictum. (Capsidæ.)

Locality: Florissant, Colo. Horizon: Oligocene.

1890. Scudder. Tert. ins. N. A., 370. *Pl.* 20, *fig*. 4.

3084. Aradus ———. (Aradidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1845. Berendt. Bernst. befindl. organ. reste vorw., i: 55.

3085. Aradus —— (larva). (Aradidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1856. Germ.-Ber. Berendt, Bernst. befindl. organ. reste vorw., ii, th. i: 23. *Pl.* 3, *fig.* 17.

3086. Aradus ——. (Aradidæ.)

Compared with A. corticalis.

Locality: Aix, France. Horizon: Ligurian.

1847. Hope. Trans. ent. soc. Lond., iv: 252.

3087. Aradus ——. (Aradidæ.)

Locality: Florissant, Colo. Horizon: Oligocene.

1885. Scudder. Zittel, Handb. palaeont., i, th. ii: 784.
1886. " Zittel-Barrois, Traité de paléont., ii: 784.
1886. " Bull. U. S. geol. surv., No. 31: 62.

3088. Aradus ——. (Aradidæ.)

Locality: Aix, France. Horizon: Ligurian.

1829. Serres. Géogn. terr. tert., 227.

3089. Aradus antediluvianus. (Aradidæ.)

Locality: Radoboj, Croatia. Horizon: Mayencian.

1853. Heer. Insektenf. tertiärg. Oeningen, iii: 73. *Pl.* 5, *fig.* 16.
1855. " Ber. oesterreich. litt., 1850-'53: 201.
1856. Giebel. Insect. d. vorwelt, 362.

3090. Aradus assimilis. (Aradidæ.)

Compared with A. depressus, Europe.

Locality: Prussian amber. Horizon: Ligurian.

1856. Germ.-Ber. Berendt, Bernst. befindl. organ. reste vorw., ii, th. i: 22. *Pl.* 2, *fig.* 12.

3091. Aradus consimilis. (Aradidæ.)

Compared with A. annulicornis.

Locality: Prussian amber. Horizon: Ligurian.

1856. Germ.-Ber. Berendt, Bernst. befindl. organ. reste vorw., ii, th. i: 23. *Pl.* 2, *fig.* 13.

3092. Aradus superstes. (Aradidæ.)

Compared with A. corticalis, Europe.

Locality: Prussian amber. Horizon: Ligurian.

1856. Germ.-Ber. Berendt, Bernst. befindl. organ. reste vorw., ii, th. i: 22. *Pl.* 2, *fig.* 11.
1885. Scudder. Zittel, Handb. palaeont., i, th. ii: 784. *Fig.* 998.
1886. " Zittel-Barrois, Traité de paléont., ii: 784. *Fig.* 1015.

3093. Archilachnus mudgei. (Aphides.)

Locality: Florissant, Colo. Horizon: Oligocene.

1890. Scudder. Tert. ins. N. A., 247-248.

3014. ——— ——— (several). (Fulgoridæ.)

Locality: Florissant, Colo. Horizon: Oligocene.

1881. Scudder. Bull. U. S. geol. surv. terr., vi: 293.
1883. " Ann. rep. U. S. geol. surv. terr., xii: 282.

3015. ——— ——— (Jassides.)

Locality: Brunstatt, Alsatia. Horizon: Middle Oligocene.

1889. Foerster. Mitth. comm. geol. Elsass-Lothr., ii: 102.

3016. ——— ——— (several). (Lygæidæ.)

Locality: Aix, France. Horizon: Ligurian.

1829. Curtis. Edinb. new phil. journ., vii: 296.
1829. " Murchison-Lyell, Tert. form. Aix, 12.

3017. ——— ——— (7 sp.). (Lygæidæ.)

Locality: Brunstatt, Alsatia. Horizon: Middle Oligocene.

1889. Foerster. Mitth. comm. geol. Elsass-Lothr., ii: 102.

3018. ——— ——— (several). (Lygæidæ.)

Locality: Florissant, Colo. Horizon: Oligocene.

1881. Scudder. Bull. U. S. geol. surv. terr., vi: 292.
1883. " Ann. rep. U. S. geol. surv. terr., xii: 282.

3019. ——— ——— (several). (Pentatomidæ.)

Locality: Florissant, Colo. Horizon: Oligocene.

1881. Scudder. Bull. U. S. geol. surv. terr., vi: 292.
1883. " Ann. rep. U. S. geol. surv. terr., xii: 282.

3020. ——— ——— (several). (Pentatomidæ-Corimalænidæ.)

Locality: Florissant, Colo. Horizon: Oligocene.

1881. Scudder. Bull. U. S. geol. surv. terr., vi: 292.
1883. " Ann. rep. U. S. geol. surv. terr., xii: 282.

3021. ——— ——— (8 sp.). (Pentatomidæ-Cydnida.)

Locality: Brunstatt, Alsatia. Horizon: Middle Oligocene.

1889. Foerster. Mitth. comm. geol. Elsass-Lothr., ii: 102.

3022. ——— ——— (Reduviidæ.)

Locality: Brunstatt, Alsatia. Horizon: Middle Oligocene.

1889. Foerster. Mitth. comm. geol. Elsass-Lothr., ii: 102.

3023. ——— ——— (several). (Reduviidæ.)

Locality: Florissant, Colo. Horizon: Oligocene.

1881. Scudder. Bull. U. S. geol. surv. terr., vi: 292.
1883. " Ann. rep. U. S. geol. surv. terr., xii: 282.

3024. Acanthosoma? ——— (Pentatomidæ.)

Locality: Brunstatt, Alsatia. Horizon: Middle Oligocene.

1890. Foerster. In litt.

3025. Acanthosoma livida. (Pentatomidæ.)

Locality: Radoboj, Croatia. **Horizon**: Mayencian.

1853.	Heer.	Insektenf. tertiärg. Oeningen, iii: 41–42. *Pl.* 3, *fig.* 6; *pl.* 8, *fig.* 3.
1856	"	Ber. oesterreich. litt., 1850–'53: 200..
1856.	Giebel.	Insect. d. vorwelt, 346.

3026. Acanthosoma maculata. (Pentatomidæ.)

Locality: Radoboj, Croatia. **Horizon**: Mayencian.

1853.	Heer.	Insektenf. tertiärg. Oeningen, iii: 42–43. *Pl.* 3, *fig.* 7; *pl.* 8, *fig.* 5.
1855.	"	Ber. oesterreich. litt., 1850–'53: 200.
1856.	Giebel.	Insect. d. vorwelt, 346–347.
1885.	Scudder.	Zittel, Handb. palaeont., i, th. ii: 785. *Fig.* 1003.
1886.	"	Zittel-Barrois, Traité de paléont., ii: 785. *Fig.* 1020.

3027. Acanthosoma morloti. (Pentatomidæ.)

Locality: Radoboj, Croatia. **Horizon**: Mayencian.

1853.	Heer.	Insektenf. tertiärg. Oeningen, iii: 39–41. *Pl.* 3, *fig.* 5; *pl.* 8. *fig.* 4.
1855.	"	Ber. oesterreich. litt., 1850–'53: 200.
1856.	Giebel.	Insect. d. vorwelt, 346.

3028. Achrestocoris cinerarius. (Coreidæ.)

Locality: Florissant, Colo. **Horizon**: Oligocene.

1890.	Scudder.	Tert. ins. N. A., 413-414. *Pl.* 22, *fig.* 1.

3029. Acocephalus adæ. (Jassides.)

Locality: Green River, Wyo. **Horizon**: Oligocene.

1878.	Scudder.	Bull. U. S. geol. surv. terr., iv: 771.
1890.	"	Tert. ins. N. A., 311. *Pl.* 6, *fig.* 29.

3030. Acocephalus callosus. (Jassides.)

Locality: Florissant, Colo. **Horizon**: Oligocene.

1890.	Scudder.	Tert. ins. N. A., 311-312. *Pl.* 19, *fig.* 15.

3031. Acocephalus crassiusculus. (Jassides.)

Locality: Radoboj, Croatia. **Horizon**: Mayencian.

1853.	Heer.	Insektenf. tertiärg. Oeningen, iii: 112. *Pl.* 13, *fig.* 2.
1855.	"	Ber. oesterreich. litt., 1850–'53: 203.
1856.	Giebel.	Insect. d. vorwelt, 385.

3032. Acocephalus curtulus. (Jassides.)

Locality: Radoboj, Croatia. **Horizon**: Mayencian.

1853.	Heer.	Insektenf. tertiärg. Oeningen, iii: 110-112. *Pl.* 13, *fig.* 1.
1855.	"	Ber. oesterreich. litt., 1850–'53: 203.
1856.	Giebel.	Insect. d. vorwelt, 384–385.

3033. Ællia obsoleta. (Pentatomidæ.)

Locality: Oeningen, Baden. **Horizon**: Tortonian.

1853.	Heer.	Insektenf. tertiärg. Oeningen, iii: 32. *Pl.* 2, *fig.* 9.
1856.	Giebel.	Insect. d. vorwelt, 343.

See also Pentatoma obsoletum.

3034. Æthus punctulatus. (Pentatomidæ.)
Locality: Green River, Wyo. Horizon: Oligocene.
1878. Scudder. Bull. U. S. geol. surv. terr., iv: 769–770.
See also Stenopelta punctulata.

3035. Ætorhinus ———. (Capsidæ.)
Locality: Prussian amber. Horizon: Ligurian.
1890. Scudder. Tert. ins. N. A., 362.

3036. Agallia abstructa. (Jassides.)
Locality: Florissant, Colo. Horizon: Oligocene.
1890. Scudder. Tert. ins. N. A., 307. *Pl.* 19, *fig.* 5.

3037. Agallia flaccida. (Jassides.)
Locality: Florissant, Colo. Horizon: Oligocene.
1890. Scudder. Tert. ins. N. A., 306. *Pl.* 19, *fig.* 18.

3038. Agallia instabilis. (Jassides.)
Locality: Florissant, Colo. Horizon: Oligocene.
1890. Scudder. Tert. ins. N. A., 306–307. *Pl.* 21, *fig.* 1.

3039. Agallia lewisii. (Jassides.)
Locality: Florissant, Colo. Horizon: Oligocene.
1890. Scudder. Tert. ins. N. A., 305–306. *Pl.* 19, *figs.* 7, 21.

3040. Aleurodes aculeatus. (Coccidæ.)
Compared with A. chelidonii Latr.
Locality: Prussian amber. Horizon: Ligurian.
1856. Menge. Progr. petrischule Danzig, 1856: 18.

3041. Alydus herrichii. (Coreidæ.)
Compared with A. lateralis Germ.
Locality: Oeningen, Baden. Horizon: Tortonian.
1861. Heer. Rech. climat pays tert., 203 (undescr.).

3042. Alydus pristinus. (Coreidæ.)
Compared with A. calcaratus.
Locality: Vic. Bonn, Rhenish Prussia. Horizon: Aquitanian ?
1837. Germar. Fauna insect. Europae, xix: 18. *Pl.* 18.
1852. Giebel. Deutschl. petref., 636.
1856. " Insect. d. vorwelt, 349.

3043. Alydus pulchellus. (Coreidæ.)
Locality: Oeningen, Baden. Horizon: Tortonian.
1853. Heer. Insektenf. tertiärg. Oeningen, iii: 47–49, 128. *Pl.* 4, *fig.* 2; *pl.* 8, *fig.* 9; *pl.* 14, *fig.* 19.
1856. Giebel. Insect. d. vorwelt, 349.

3044. Amalancon lutosus. (Aphides.)
Locality: Florissant, Colo. Horizon: Oligocene.
1890. Scudder. Tert. ins. N. A., 270–271. *Pl.* 18, *fig.* 13.

3045. Anasa priscoputida. (Coreidæ.)

Locality: Florissant, Colo. **Horizon:** Oligocene.

1890. Scudder. Tert. ins. N. A., 412–413. *Pl.* 24, *fig.* 4.

3046. Anconatus bucktoni. (Aphides.)

Locality: Florissant, Colo. **Horizon:** Oligocene.

1890. Scudder. Tert. ins. N. A., 272–273.

3047. Anconatus dorsuosus. (Aphides.)

Locality: Florissant, Colo. **Horizon:** Oligocene.

1883. Buckton. Monogr. Brit. aphid., iv: 177–178. *Pl.* 133, *fig.* 4.

1890. Scudder. Tert. ins. N. A., 272. *Pl.* 18, *fig.* 9.

3048. Aphana atava. (Fulgorina.)

Locality: White River, Colo. **Horizon:** Oligocene.

1877. Scudder. Bull. U. S. geol. surv. terr., iii: 759–760.

1890. " Tert. ins. N. A., 281–282. *Pl.* 5, *figs.* 96, 97.

3049. Aphana rotundipennis. (Fulgorina.)

Locality: Green River, Wyo. **Horizon:** Oligocene.

1878. Scudder. Bull. U. S. geol. surv. terr., iv: 772.

1890. " Tert. ins. N. A., 282. *Pl.* 6, *fig.* 27.

3050. Aphantaphis exsuca. (Aphides.)

Locality: Florissant, Colo. **Horizon:** Oligocene.

1890. Scudder. Tert. ins. N. A., 254.

3051. Aphidioides succifera. (Aphides.)

Compared with Aphis pinophila.

Locality: Prussian amber. **Horizon:** Ligurian.

1856. Motschulsky. Étud. entom., v: 29. *Pl.*, *fig.* 8.

1883. Buckton. Monogr. Brit. aphid., iv: 164 (Aphioides). *Pl.* 132, *fig.* 7.

3052. Aphidopsis ———. (Aphides.)

Locality: Florissant, Colo. **Horizon:** Oligocene.

1890. Scudder. Tert. ins. N. A., 266. *Pl.* 18, *fig.* 11.

3053. Aphidopsis dalli. (Aphides.)

Locality: Florissant, Colo. **Horizon:** Oligocene.

1890. Scudder. Tert. ins. N. A., 264–265.

3054. Aphidopsis emaciata. (Aphides.)

Locality: Florissant, Colo. **Horizon:** Oligocene.

1890. Scudder. Tert. ins. N. A., 265.

3055. Aphidopsis hargeri. (Aphides.)

Locality: Florissant, Colo. **Horizon:** Oligocene.

1890. Scudder. Tert. ins. N. A., 262–263.

3056. Aphidopsis lutaria. (Aphides.)

Locality: Florissant, Colo. **Horizon:** Oligocene.

1890. Scudder. Tert. ins. N. A., 263.

3057. Aphidopsis margarum. (Aphides.)

Locality: Florissant, Colo. Horizon: Oligocene.

1890. Scudder. Tert. ins. N. A., 264. *Pl.* 18, *fig.* 8.

3058. Aphidopsis subterna. (Aphides.)

Locality: Florissant, Colo. Horizon: Oligocene.

1890. Scudder. Tert. ins. N. A., 261-262.

Aphioides succifera. See Aphidioides succifera.

3059. Aphis ———. (Aphides.)

Locality: Prussian amber. Horizon: Ligurian.

1845. Berendt. Bernst. befindl. organ. reste vorw., i: 55.

3060. Aphis ———. (Aphides.)

Locality: Aix, France. Horizon: Ligurian.

1829. Curtis. Edinb. new phil. journ., vii: 296.
1829. " Murchison-Lyell, Tert. form. Aix, 12.

3061. Aphis araneiformis. (Aphides.)

Compared with A. pomi.

Locality: Prussian amber. Horizon: Ligurian.

1856. Germ.-Ber. Berendt, Bernst. befindl. organ. reste vorw., ii, th. i: 6. *Pl.* 1, *fig.* 8.
1883. Buckton. Monogr. Brit. aphid., iv: 165. *Pl.* 131, *fig.* 4.

Aphis cimicoides. See Lachnus cimicoides.

3062. Aphis delicatula. (Aphides.)

Locality: Aix, France. Horizon: Ligurian.

1856. Heer. Viert. naturf. gesellsch. Zürich, i: 40. *Pl.* 2, *fig.* 13.
1883. Buckton. Monogr. Brit. aphid., iv: 170. *Pl.* 132, *fig.* 6.

3063. Aphis hirsuta. (Aphides.)

Compared with A. picridis.

Locality: Prussian amber. Horizon: Ligurian.

1856 Germ.-Ber. Berendt, Bernst. befindl. organ. reste vorw., ii, th. i: 6. *Pl.* 1, *fig.* 7.
1883. Buckton. Monogr. Brit. aphid., iv: 166. *Pl.* 131, *fig.* 5.

3064. Aphis largiflua. (Aphides.)

Locality: Prussian amber. Horizon: Ligurian.

1856. Menge. Progr. petrischule Danzig, 1856: 19 (undescr.).

3065. Aphis longicaudata. (Aphides.)

Locality: Ambérieux, France. Horizon: ———.

1853. Millière. Ann. soc. ent. Fr. (3), i: 9-11 (longicaudatus). *Pl.* 3^{11},
1883. Buckton. Monogr. Brit. aphid., descr. pl. cxxxii. *Pl.* 132, *fig.* 1,

3066. Aphis longicornis. (Aphides.)

Locality: Prussian amber. Horizon: Ligurian.

1856. Menge. Progr. petrischule Danzig, 1856: 19.

3067. **Aphis macrostyla.** (Aphides.)

Locality: Radoboj, Croatia. Horizon: Mayencian.

1853. Heer. Insektenf. tertiärg. Oeningen, iii: 121–122. *Pl.* 15, *fig.* 3.
1855. " Ber. oesterreich. litt., 1850–'53: 203.
1856. Giebel. Insect. d. vorwelt, 389.
1883. Buckton. Monogr. Brit. aphid., iv: 169–170. *Pl.* 132, *fig.* 2.

3068. **Aphis morloti.** (Aphides.)

Locality: Radoboj, Croatia. Horizon: Mayencian.

1853. Heer. Insektenf. tertiärg. Oeningen, iii: 122–123. *Pl.* 15, *figs.* 5*ab*.
1855. " Ber. oesterreich. litt., 1850–'53: 203.
1856. Giebel. Insect. d. vorwelt, 389.
1883. Buckton. Monogr. Brit. aphid., iv: 171 (morlotti). *Pl.* 132, *fig.* 9.
See also Lachnus ——— Buckton.

Aphis morlotti. See Aphis morloti.

3069. **Aphis pallescens.** (Aphides.)

Locality: Radoboj, Croatia. Horizon: Mayencian.

1853. Heer. Insektenf. tertiärg. Oeningen, iii: 122. *Pl.* 15, *fig.* 4.
1855. " Ber. oesterreich. litt., 1850–'53: 203.
1856. Giebel. Insect. d. vorwelt, 389.
1883. Buckton. Monogr. Brit. aphid., iv: 170–171. *Pl.* 132, *figs.* 10, 10*a*.

3070. **Aphis retrolactens.** (Aphides.)

Locality: Prussian amber. Horizon: Ligurian.

1856. Menge. Progr. petrischule Danzig, 19 (undescr.).

3071. **Aphis transparens.** (Aphides.)

Locality: Prussian amber. Horizon: Ligurian.

1856. Germ.-Ber. Berendt, Bernst. befindl. organ. reste vorw., ii, th. i: 7. *Pl.* 2, *fig.* 1.
1883. Buckton. Monogr. Brit. aphid., iv: 168. *Pl.* 131, *fig.* 10.

3072. **Aphrophora** ———. (Cercopidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1845. Berendt. Bernst. befindl. organ. reste vorw., i: 55.

3073. **Aphrophora** ——— (4 sp.). (Cercopidæ.)

Locality: Brunstatt, Alsatia. Horizon: Middle Oligocene.

1890. Foerster. In litt.

3074. **Aphrophora** ———. (Cercopidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1835. Gravenhorst. Uebers. schles. gesellsch. vaterl. cult., 1834: 93.

3075. **Aphrophora** ———. (Cercopidæ.)

Locality: Florissant, Colo. Horizon: Oligocene.

1890. Scudder. Tert. ins. N. A., 337. *Pl.* 19, *fig.* 10.

3076. Aphrophora (Ptyelus) carbonaria. (Cercopidæ.)

Compared with A. leucophthalma, Europe.

Locality: Prussian amber. Horizon: Ligurian.

1856. Germ.-Ber. Berendt, Bernst. befindl. organ. reste vorw., ii, th. i: 11-12 (Ptyela). *Pl.* 2, *fig.* 3.

3077. Aphrophora electrina. (Cercopidæ.)

Compared with A. (Ptyela) leucophthalma, Europe.

Locality: Prussian amber. Horizon: Ligurian.

1856. Germ.-Ber. Berendt, Bernst. befindl. organ. reste vorw., ii, th. i: 10-11. *Pl.* 1, *fig.* 15.

3078. Aphrophora molassica. (Cercopidæ.)

Locality: Greith, Hohe Rhonen, Germany. Horizon: Aquitanian.

1853. Heer. Insektenf. tertiärg. Oeningen, iii: 107-109. *Pl.* 12, *fig.* 9.
1856. Giebel Insect. d. vorwelt, 383.

Aphrophora pinguicola. See Aphrophora pinguicula.

3079. Aphrophora pinguicula. (Cercopidæ.)

Locality: Aix, France. Horizon: Ligurian.

1853. Heer. Insektenf. tertiärg. Oeningen, iii: 107. *Pl.* 12, *fig.* 8.
1856. " Viert. naturf. gesellsch. Zürich, i: 39.
1856. Giebel. Insect. d. vorwelt, 383 (pinguicola).

3080. Aphrophora spumarioides. (Cercopidæ.)

Locality: Oeningen, Baden. Horizon: Tortonian.

1853. Heer. Insektenf. tertiärg. Oeningen, iii: 106-107. *Pl.* 12, *fig.* 7.
1856. Giebel. Insect. d. vorwelt, 383.

3081. Aphrophora spumifera. (Cercopidæ.)

Localities: Radoboj, Croatia; Aix, France. Horizon: Mayencian, Ligurian.

1853. Heer. Insektenf. tertiärg. Oeningen, iii: 104-106, 134. *Pl.* 12, *fig.* 6.
1855. " Ber. oesterreich. litt., 1850-'53: 202.
1856. " Viert. naturf. gesellsch. Zürich, i: 39.
1856. Giebel. Insect. d. vorwelt, 383.
See also Tettigonia —— Curtis, Tettigonia spumaria.

3082. Aphrophora vetusta. (Cercopidæ.)

Compared with Gypona glauca, Brazil.

Locality: Prussian amber. Horizon: Ligurian.

1856. Germ.-Ber. Berendt, Bernst. befindl. organ. reste vorw., ii, th. i: 11. *Pl.* 1, *fig.* 16.

3083. Aporema præstrictum. (Capsidæ.)

Locality: Florissant, Colo. Horizon: Oligocene.

1890. Scudder. Tert. ins. N. A., 370. *Pl.* 20, *fig.* 4.

3084. Aradus ——. (Aradidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1845. Berendt. Bernst. befindl. organ. reste vorw., i: 55.

3085. Aradus ——— (larva). (Aradidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1856. Germ.-Ber. Berendt, Bernst. befindl. organ. reste vorw., ii, th. i: 23. *Pl.* 3, *fig.* 17.

3086. Aradus ———. (Aradidæ.)

Compared with A. corticalis.

Locality: Aix, France. Horizon: Ligurian.

1847. Hope. Trans. ent. soc. Lond., iv: 252.

3087. Aradus ———. (Aradidæ.)

Locality: Florissant, Colo. Horizon: Oligocene.

1885. Scudder. Zittel, Handb. palaeont., i, th. ii: 784.
1886. " Zittel-Barrois, Traité de paléont., ii: 784.
1886. " Bull. U. S. geol. surv., No. 31: 62.

3088. Aradus ———. (Aradidæ.)

Locality: Aix, France. Horizon: Ligurian.

1829. Serres. Géogn. terr. tert., 227.

3089. Aradus antediluvianus. (Aradidæ.)

Locality: Radoboj, Croatia. Horizon: Mayencian.

1853. Heer. Insektenf. tertiärg. Oeningen, iii: 73. *Pl.* 5, *fig.* 16.
1855. " Ber. oesterreich. litt., 1850-'53: 201.
1856. Giebel. Insect. d. vorwelt, 362.

3090. Aradus assimilis. (Aradidæ.)

Compared with A. depressus, Europe.

Locality: Prussian amber. Horizon: Ligurian.

1856. Germ.-Ber. Berendt, Bernst. befindl. organ. reste vorw., ii, th. i: 22. *Pl.* 2, *fig.* 12.

3091. Aradus consimilis. (Aradidæ.)

Compared with A. annulicornis.

Locality: Prussian amber. Horizon: Ligurian.

1856. Germ.-Ber. Berendt, Bernst. befindl. organ. reste vorw., ii, th. i: 23. *Pl.* 2, *fig.* 13.

3092. Aradus superstes. (Aradidæ.)

Compared with A. corticalis, Europe.

Locality: Prussian amber. Horizon: Ligurian.

1856. Germ.-Ber. Berendt, Bernst. befindl. organ. reste vorw., ii, th. i: 22. *Pl.* 2, *fig.* 11.
1885. Scudder. Zittel, Handb. palaeont., i, th. ii: 784. *Fig.* 998.
1886. " Zittel-Barrois, Traité de paléont., ii: 784. *Fig.* 1015.

3093. Archilachnus mudgei. (Aphides.)

Locality: Florissant, Colo. Horizon: Oligocene.

1890. Scudder. Tert. ins. N. A., 247-248.

3094. Archilachnus pennatus. (Aphides.)

Locality: Florissant, Colo. Horizon: Oligocene.

1883. Buckton. Monogr. Brit. aphid., iv: 177. *Pl.* 133, *fig.* 3.

1890. Scudder. Tert. ins. N. A., 247. *Pl.* 18, *figs.* 1, 15–17.

3095. Arma ——. (Pentatomidæ.)

Locality: Brunstatt, Alsatia. Horizon: Middle Oligocene.

1890. Foerster. In litt.

3096. Asira tertiaria. (Fulgoridæ.)

Locality: Aix, France. Horizon: Ligurian.

1856. Giebel. Insect. d. vorwelt, 377.

See also Asiraca ——, A. tertiaria, Cicadellites obscurus.

3097. Asiraca ——. (Fulgoridæ.)

Locality: Aix, France. Horizon: Ligurian.

1829. Curtis. Edinb. new phil. journ., vii: 296. *Pl.* 6, *fig.* 5.

1829. " Murchison-Lyell, Tert. form. Aix, 12. *Pl.* 6, *fig.* 5.

See also Asira tertiaria, etc.

3098. Asiraca tertiaria. (Fulgoridæ.)

Locality: Aix, France. Horizon: Ligurian.

1890. Scudder. Tert. ins. N. A., 295.

See also Asira tertiaria, etc.

3099. Belostoma ——. (Belostomatidæ.)

Locality: Rhine, Germany. Horizon: Aquitanian?.

1831. Goldfuss. Verhandl. leop.-carol. akad. naturf., vii, abth. i: 118.

3100. Belostoma goldfussi. (Belostomatidæ.)

Compared with B. grundi.

Locality: Vicinity Bonn, Rhenish Prussia. Horizon: Aquitanian?.

1837. Germar. Fauna insect. Europæ, xix: 17. *Pl.* 17.

1852. Giebel. Deutschl. petref., 636.

1856. " Insect. d. vorwelt, 371 (Belostomum).

3101. Belostoma speciosum. (Belostomatidæ.)

Compared with B. grande, Brazil.

Locality: Oeningen, Baden. Horizon: Tortonian.

1865. Heer. Urwelt der Schweiz, 392. *Fig.* 303, on *p.* 391.

1872. " Monde prim. Suisse, 481. *Fig.* 303, on *p.* 479.

1876. " Prim. world Switz., ii: 51. *Fig.* 303, on *p.* 49.

1879. " Urwelt der Schweiz, 2^e aufl., 418. *Fig.* 345, on *p.* 417.

See also Belostomates speciosa.

3102. Belostomates harrisii. (Belostomatidæ.)

Locality: Oeningen, Baden. Horizon: Tortonian.

1888. Schöberlin. Soc. ent., iii: 61 (undescr.).

3103. Belostomates speciosa. (Belostomatidæ.)

Locality: Oeningen, Baden. Horizon: Tortonian.

1888.	Schöberlin.	Soc. ent., iii: 61.

See also Belostoma speciosum.

Belostomum goldfussi. See Belostoma goldfussi.

3104. Berytopsis femoralis. (Coreidæ.)

Locality: Oeningen, Baden. Horizon: Tortonian.

1853.	Heer.	Insektenf. tertiärg. Oeningen, iii: 55–56. *Pl.* 4, *fig.* 9; *pl.* 9, *fig.* 3.
1853–'56.	Bronn.	Lethæa geogn., 3^{e} aufl., iii: 642. *Pl.* 42′, *figs.* 17*a–c*.
1856.	Giebel.	Insect. d. vorwelt, 352.
1885.	Scudder.	Zittel, Handb. palaeont., i, th. ii: 785. *Fig.* 1002.
1886.	"	Zittel-Barrois, Traité de paléont., ii: 785. *Fig.* 1019.

3105. Berytus ——. (Coreidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1856.	Menge.	Progr. petrischule Danzig, 1856: 20.

3106. Brachypelta ——. (Pentatomidæ.)

Locality: Brunstatt Alsatia. Horizon: Middle Oligocene.

1890.	Foerster.	In litt.

3107. Brachypelta rotundata. (Pentatomidæ.)

Localities: Krottensee, Aag bei Franzensbad, Bohemia. Horizon: Aquitanian.

1877.	Novák.	Sitzungsb. akad. wiss. Wien, lxxvi: 80–81. *Pl.* 3, *figs.* 5*ab*.
1877.	"	Faun. egerer tertiärb., 10–11. *Pl.* 3, *figs.* 5*ab*.

3108. Bythoscopus ——. (Jassides.)

Locality: Prussian amber. Horizon: Ligurian.

1845.	Berendt.	Bernst. befindl. organ. reste vorw., i: 55.

3109. Bythoscopus homousius. (Jassides.)

Compared with B. (Jassus) flavicollis or B. bipustulatus.

Locality: Prussian amber. Horizon: Ligurian.

1856.	Germ-Ber.	Berendt, Bernst. befindl. organ. reste vorw., ii, th. i: 8. *Pl.* 1, *fig.* 10.

3110. Bythoscopus lapidescens. (Jassides.)

Locality: White River, Colo. Horizon: Oligocene.

1877.	Scudder.	Bull. U. S. geol. surv. terr., iii: 761.
1890.	"	Tert. ins. N. A., 305. *Pl.* 5, *fig.* 94.

3111. Bythoscopus melanoneurus. (Jassides.)

Locality: Radoboj, Croatia. Horizon: Mayencian.

1853.	Heer.	Insektenf. tertiärg. Oeningen, iii: 113. *Pl.* 13, *fig.* 5.
1855.	"	Ber. oesterreich. litt., 1850–'53: 203.
1856.	Giebel.	Insect. d. vorwelt, 385.

3112. Bythoscopus muscarius. (Jassides.)

Locality: Aix, France. Horizon: Ligurian.

1853.	Heer.	Insektenf. tertiärg. Oeningen, iii: 112-114. *Pl.* 13, *fig.* 4.
1856.	"	Viert. naturf. gesellsch. Zürich, i: 39.
1856.	Giebel.	Insect. d. vorwelt, 385.

3113. Cacalydus exstirpatus. (Coreidæ.)
Locality: Florissant, Colo. Horizon: Oligocene.
1890. Scudder. Tert. ins. N. A., 420. *Pl.* 25, *fig.* 3.

3114. Cacalydus lapsus. (Coreidæ.)
Locality: Florissant, Colo. Horizon: Oligocene.
1890. Scudder. Tert. ins. N. A., 419–420. *Pl.* 25, *fig.* 12.

3115. Cacoschistus maceriatus. (Pentatomidæ.)
Locality: Florissant, Colo. Horizon: Oligocene.
1890. Scudder. Tert. ins. N. A., 459.

3116. Calothrips scudderii. (Physapodes.)
Locality: Aix, France. Horizon: Ligurian.
1873. Oustalet. Bull. soc. philom. Paris, x: 23–24.

3117. Capsus ——. (Capsidæ.)
Locality: Prussian amber. Horizon: Ligurian.
1845. Berendt. Bernst. befindl. organ. reste vorw., i: 55.

3118. Capsus ——. (Capsidæ.)
Compared with C. spissicornis.
Locality: Prussian amber. Horizon: Ligurian.
1835. Gravenhorst. Uebers. schles. gesellsch. vaterl. cult., 1834: 93.

3119. Capsus ——. (Capsidæ.)
Compared with C. triguttatus.
Locality: Prussian amber. Horizon: Ligurian.
1835. Gravenhorst. Uebers. schles. gesellsch. vaterl. cult., 1834: 93.

3120. Capsus ——. (Capsidæ.)
Locality: Prussian amber. Horizon: Ligurian.
1890. Scudder. Tert. ins. N. A., 362.

3121. Capsus lacus. (Capsidæ.)
Locality: Florissant, Colo. Horizon: Oligocene.
1890. Scudder. Tert. ins. N. A., 369. *Pl.* 22, *fig.* 2.

3122. Capsus obsolefactus. (Capsidæ.)
Locality: Florissant, Colo. Horizon: Oligocene.
1890. Scudder. Tert. ins. N. A., 368–369. *Pl.* 23, *fig.* 13.

3123. Carmelus gravatus. (Capsidæ.)
Compared with C. parvus.
Locality: Florissant, Colo. Horizon: Oligocene.
1890. Scudder. Tert. ins. N. A., 364. *Pl.* 24, *fig.* 10.

3124. Camelus sepositus. (Capsidæ.)
Compared with C. parvus.
Locality: Florissant, Colo. Horizon: Oligocene.
1890. Scudder Tert. ins. N. A., 364. *Pl.* 24, *fig.* 6.

3125. Cataneura absens. (Aphides.)

Locality: Florissant, Colo. Horizon: Oligocene.

1890. Scudder. Tert. ins. N. A., 245.

3126. Cataneura rileyi. (Aphides.)

Locality: Florissant, Colo. Horizon: Oligocene.

1890. Scudder. Tert. ins. N. A., 245–246.

3127. Catopamera augheyi. (Lygæidæ.)

Locality: Florissant, Colo. Horizon: Oligocene.

1890. Scudder. Tert. ins. N. A., 387. *Pl.* 27, *fig.* 7.

3128. Catopamera bradleyi. (Lygæidæ.)

Locality: Florissant, Colo. Horizon: Oligocene.

1890. Scudder. Tert. ins. N. A., 387–388. *Pl.* 26, *fig.* 12.

3129. Catopsylla prima. (Psyllidæ.)

Locality: Florissant, Colo. Horizon: Oligocene.

1890. Scudder. Tert. ins. N. A., 277–278.

3130. Cephalocoris pilosus. (Lygæidæ.)

Locality: Oeningen, Baden. Horizon: Tortonian.

1853. Heer. Insektenf. tertiärg. Oeningen, iii: 61–62. *Pl.* 4, *fig.* 16; *pl.* 9, *fig.* 7.
1853–'56. Bronn. Lethæa geogn., 3^e^ aufl., iii: 641–642. *Pl.* 42′, *figs.* 16*ab*.
1856. Giebel. Insect. d. vorwelt, 355.
1885. Scudder. Zittel, Handb. palaeont., i, th. ii: 785. *Fig.* 1000.
1886. " Zittel-Barrois, Traité de paléont., ii: 784. *Fig.* 1017.

3131. Cercopidium rugulosum. (Cercopidæ.)

Locality: Atanekerdluk, Greenland. Horizon: Miocene.

1870. Heer. Phil. trans., clix (Flora foss. arct., ii): 485. *Pl.* 44, *figs.* 9*b*, 9*bb*.
1883. " Flora foss. grönl., ii: 148.

3132. Cercopis ——. (Cercopidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1845. Berendt. Bernst. befindl. organ. reste vorw., i: 55.

3133. Cercopis ——. (Cercopidæ.)

Locality: Brunstatt, Alsatia. Horizon: Middle Oligocene.

1890. Foerster. In litt.

3134. Cercopis ——. Cercopidæ.)

Locality: Rhine, Germany. Horizon: Aquitanian.

1831. Goldfuss. Verhandl. leop.-carol. akad. naturf., vii, abth. i: 118.

3135. Cercopis ——. (Cercopidæ.)

Compared with C. gibba.

Locality: Prussian amber. Horizon: Ligurian.

1835. Gravenhorst. Uebers. schles. gesellsch. vaterl. cult., 1834: 93.

3136. Cercopis ——. (Cercopidæ.)

Compared with C. pini.

Locality: Prussian amber. Horizon: Ligurian.

1835. Gravenhorst. Uebers. schles. gesellsch. vaterl. cult., 1834: 93.

3137. Cercopis ——. (Cercopidæ.)

Locality: Aix, France. Horizon: Ligurian.

1829. Serres. Géogn. terrains. tert., 267.

3138. Cercopis astricta. (Cercopidæ.)

Locality: Green River, Wyo. Horizon: Oligocene.

1890. Scudder. Tert. ins. N. A., 318–319. *Pl.* 7, *fig.* 15.

3139. Cercopis aurata. (Cercopidæ.)

Compared with C. rubra, Brazil.

Locality: Prussian amber. Horizon: Ligurian.

1862. Giebel. Zeitschr. ges. naturw., xx: 314.

3140. Cercopis charpentieri. (Cercopidæ.)

Locality: Radoboj, Croatia. Horizon: Mayencian.

1853. Heer. Insektenf. tertiärg. Oeningen, iii: 101–103. *Pl.* 12, *fig.* 1.
1855. " Ber. oesterreich. litt., 1850–'53: 202.
1856. Giebel. Insect. d. vorwelt, 381–382.

See also Hylotoma cineracea.

3141. Cercopis fasciata. (Cercopidæ.)

Locality: Radoboj, Croatia. Horizon: Mayencian.

1853. Heer. Insektenf. tertiärg. Oeningen, iii: 100–101. *Pl.* 11, *fig.* 9 (not 10).
1855. " Ber. oesterreich. litt., 1850–'53: 202.
1856. Giebel. Insect. d. vorwelt, 381.
1890. Scudder. Tert. ins. N. A., 333.

3142. Cercopis germari. (Cercopidæ.)

Locality: Oeningen, Baden. Horizon: Tortonian.

1865. Heer. Urwelt der Schweiz, 393. *Fig.* 305, on *p.* 391.
1872. " Monde prim. Suisse, 482. *Fig.* 305, on *p.* 479.
1876. " Prim. world Switz., ii: 52. *Fig.* 305, on *p.* 49.
1879. " Urwelt der Schweiz, 2e aufl., 419. *Fig.* 347, on *p.* 417.

3143. Cercopis gigantea. (Cercopidæ.)

Locality: Radoboj, Croatia. Horizon: Mayencian.

1853. Heer. Insektenf. tertiärg. Oeningen, iii: 94–95. *Pl.* 11, *fig.* 5.
1855. " Ber. oesterreich. litt., 1850–'53: 202.
1856. Giebel. Insect. d. vorwelt, 380.

3144. Cercopis glückseligi. (Cercopidæ.)

Locality: Grasseth, Bohemia. Horizon: ——.

1857. Heer. Jokély, Jahrb. geol. reichsanst., viii: 502 (undescr.).

3145. Cercopis hageni. (Cercopidæ.)

Locality: Oeningen, Baden. Horizon: Tortonian.

1865.	Heer.	Urwelt der Schweiz, 393.
1872.	"	Monde prim. Suisse, 482.
1876.	"	Prim. world Switz., ii: 52.
1879.	"	Urwelt der Schweiz, 2e aufl., 419.

3146. Cercopis haidingeri. (Cercopidæ.)

Locality: Radoboj, Croatia. Horizon: Mayencian.

1853.	Heer.	Insektenf. tertiärg. Oeningen, iii: 95–96. *Pl.* 11, *fig.* 6.
1855.	"	Ber. oesterreich. litt., 1850–'53: 202.
1856.	Giebel.	Insect. d. vorwelt, 380.

See also Locrites haidingeri.

3147. Cercopis herrichi. (Cercopidæ.)

Locality: Oeningen, Baden. Horizon: Tortonian.

1865.	Heer.	Urwelt der Schweiz, 393.
1872.	"	Monde prim. Suisse, 482.
1876.	"	Prim. world Switz., ii: 52.
1879.	"	Urwelt der Schweiz, 2e aufl., 419.

3148. Cercopis lanceolata. (Cercopidæ.)

Locality: Radoboj, Croatia. Horizon: Mayencian.

1853.	Heer.	Insektenf. tertiärg. Oeningen, iii: 104. *Pl.* 12, *fig.* 3.
1855.	"	Ber. oesterreich. litt., 1850–'53: 202.
1856.	Giebel.	Insect. d. vorwelt, 382.

3149. Cercopis longicollis. (Cercopidæ.)

Locality: Radoboj, Croatia. Horizon: Mayencian.

1853.	Heer.	Insektenf. tertiärg. Oeningen, iii: 103–104. *Pl.* 12, *fig*, 2.
1855.	"	Ber. oesterreich. litt., 1850–'53: 202.
1856.	Giebel.	Insect. d. vorwelt, 382.

3150. Cercopis melæna. (Cercopidæ.)

Compared with C. sanguinolenta.

Locality: Prussian amber. Horizon: Ligurian.

1856.	Germ.-Ber.	Berendt, Bernst. befindl. organ. reste vorw., ii, th. i: 12. *Pl.* 1, *fig.* 17.
1890.	Scudder.	Tert. ins. N. A., 333.

3151. Cercopis œningensis. (Cercopidæ.)

Locality: Oeningen, Baden. Horizon: Mayencian.

1853.	Heer.	Insektenf. tertiärg. Oeningen, iii: 98–99. *Pl.* 11, *fig.* 8 (not 9).
1856.	Giebel.	Insect. d. vorwelt, 380–381.
1890.	Scudder.	Tert. ins. N. A., 333.

3152. Cercopis pallida. (Cercopidæ.)

Locality: Radoboj, Croatia. Horizon: Mayencian.

1853.	Heer.	Insektenf. tertiärg. Oeningen, iii: 97–98. *Pl.* 11, *fig.* 7 (not 8).
1855.	"	Ber. oesterreich. litt., 1850–'53: 202.
1856.	Giebel.	Insect. d. vorwelt, 380.
1890.	Scudder.	Tert. ins. N. A., 333.

3153. Cercopis rectelinea. (Cercopidæ.)

Locality: Radoboj, Croatia. Horizon: Mayencian.

1853.	Heer.	Insektenf. tertiärg. Oeningen, iii: 99–100. *Pl.* 11, *fig.* 10 (not 11).
1855.	"	Ber. oesterreich. litt., 1850–'53: 202 (rectilinea).
1856.	Giebel.	Insect. d. vorwelt, 381 (rectilinea).
1890.	Scudder.	Tert. ins. N. A., 333.

Cercopis rectilinea. See Cercopis rectelinea.

3154. Cercopis selwyni. (Cercopidæ.)

Locality: Nine-Mile Creek, British Columbia. Horizon: ——.

1879.	Scudder.	Rep. progr. geol. surv. Can., 1877–'78: B 184–185.
1879.	"	Ins. tert. Nicola, 9–10.
1890.	"	Tert. ins. N. A., 318. *Pl.* 2, *figs.* 14, 15.

3155. Cercopis suffocata. (Cercopidæ.)

Locality: Florissant, Colo. Horizon: Oligocene.

1890.	Scudder.	Tert. ins. N. A., 319. *Pl.* 19, *figs.* 2, 3.

3156. Cercopis ungeri. (Cercopidæ.)

Locality: Radoboj, Croatia. Horizon: Mayencian.

1853.	Heer.	Insektenf. tertiärg. Oeningen, iii: 96–97. (Heer quotes *pl.* 11, *fig.* 7, but this species is not figured at all.)
1855.	"	Ber. oesterreich. litt., 1850–'53: 202.
1856.	Giebel.	Insect. d. vorwelt, 380.

3157. Cercopites calliscens. (Cercopidæ.)

Locality: Green River, Wyo. Horizon: Oligocene.

1890.	Scudder.	Tert. ins. N. A., 317. *Pl.* 6, *fig.* 32.

3158. Cercopites umbratilis. (Cercopidæ.)

Locality: Green River, Wyo. Horizon: Oligocene.

1890.	Scudder.	Tert. ins. N. A., 316–317. *Pl.* 7, *fig.* 9.

3159. Cholula triguttata. (Lygæidæ.)

Locality: Green River, Wyo. Horizon: Oligocene.

1890.	Scudder.	Tert. ins. N. A., 389–390. *Pl.* 7, *fig.* 21.

3160. Cicada ——. (Stridulantia.)

Locality: Prussian amber. Horizon: Ligurian.

1830.	Berendt.	Insekten im bernstein, 37.

3161. Cicada ——. (Stridulantia.)

Locality: Copal. Horizon: Recent.

1776.	Bloch.	Beschäft. berl. gesellsch. naturf. freunde, ii: 187.

3162. Cicada ——. (Stridulantia.)

Locality: Prussian amber. Horizon: Ligurian.

1831.	Burmeister.	Oken, Isis, 1831: 1100.

3163. Cicada ——. (Stridulantia.)

Compared with C. plebeja.

Locality: Aix, France. Horizon: Ligurian.

1829. Serres. Géogn. terr. tert., 228.

3164. Cicada ——. (Stridulantia.)

Compared with C. violacea.

Locality: Aix, France. Horizon: Ligurian.

1829. Serres. Géogn. terr. tert., 228.

3165. Cicada aichhorni. (Stridulantia.)

Locality: Radoboj, Croatia. Horizon: Mayencian.

1853. Heer. Insektenf. tertiärg. Oeningen, iii: 89. *Pl.* 11, *fig.* 2.
1855. " Ber. oesterreich. litt., 1850–'53: 202.
1856. Giebel. Insect. d. vorwelt, 374.

3166. Cicada bifasciata. (Stridulantia.)

Locality: Radoboj, Croatia. Horizon: Mayencian.

1853. Heer. Insektenf. tertiärg. Oeningen, iii: 90. *Pl.* 11, *fig.* 4.
1855. " Ber. oesterreich. litt. 1850–'53: 202.
1856. Giebel. Insect. d. vorwelt, 374–375.

3167. Cicada emathion. (Stridulantia.)

Locality: Oeningen, Baden. Horizon: Tortonian.

1853. Heer. Insektenf. tertiärg. Oeningen, iii: 88. *Pl.* 11, *fig.* 1.
1856. Giebel. Insect. d. vorwelt, 374.
1865. Heer. Urwelt der Schweiz, 393. *Fig.* 304, on *p.* 391.
1872. " Monde prim. Suisse, 481. *Fig.* 304, on *p.* 479.
1876. " Prim. world Switz., ii: 51. *Fig.* 304, on *p.* 49.
1879. " Urwelt der Schweiz, 2^e aufl., 418. *Fig.* 346, on *p.* 417.

3168. Cicada ungeri. (Stridulantia.)

Locality: Radoboj, Croatia. Horizon: Mayencian.

1853. Heer. Insektenf. tertiärg. Oeningen, iii: 89–90. *Pl.* 11, *fig.* 3.
1855. " Ber. oesterrich. litt., 1850–'53: 202.
1856. Giebel. Insect. d. vorwelt, 374.

3169. Cicadellites bruckmanni. (Jassides.)

Locality: Oeningen, Baden. Horizon: Tortonian.

1853. Heer. Insektenf. tertiärg. Oeningen, iii: 120. *Pl.* 13, *fig.* 8.
1856. Giebel. Insect. d. vorwelt, 387.

3170. Cicadellites nigriventris. (Jassides.)

Locality: Radoboj, Croatia. Horizon: Mayencian.

1853. Heer. Insektenf. tertiärg. Oeningen, iii: 119–120. *Pl.* 13, *fig.* 13.
1855. " Ber. oesterreich. litt., 1850–'53: 203.
1856. Giebel. Insect. d. vorwelt, 387.

3171. Cicadellites oblongus. (Jassides.)

Locality: Oeningen, Baden. Horizon: Tortonian.

1853. Heer. Insektenf. tertiärg. Oeningen, iii: 120. *Pl.* 13, *fig.* 9.
1856. Giebel. Insect. d. vorwelt, 387.

3172. Cicadellites obscurus. (Jassides.)

Locality: Aix, France. Horizon: Ligurian.

1856. Heer. Viert. naturf. gesellsch. Zürich, i: 39–40.

See also Asira tertiaria, etc.

3173. Cicadellites pallidus. (Jassides.)

Locality: Radoboj, Croatia. Horizon: Mayencian.

1853. Heer. Insektenf. tertiärg. Oeningen, iii: 119. *Pl.* 13, *fig.* 7.
1855. " Ber. oesterreich. litt., 1850–'53: 203.
1856. Giebel. Insect. d. vorwelt, 387.

3174. Cicadula saxosa. (Jassides.)

Compared with C. sexnotata, United States.

Locality: Green River, Wyo. Horizon: Oligocene.

1890. Scudder. Tert. ins. N. A., 310–311. *Pl.* 6, *fig.* 26.

3175. Cimex ——.

Locality: Unterkirchberg, Germany. Horizon: Miocene.

1849. Eser. Jahresh. ver. vaterl. naturk. Württ., iv: 265.

3176. Cimex ——.

Locality: Prussian amber. Horizon: Ligurian.

1820. Schlotheim. Petrefactenk., 43.

3177. Cimex ——.

Locality: Prussian amber. Horizon: Ligurian.

1829. Serres. Géogn. terrains tert., 241.
1830. Berendt. Insekten im bernstein, 37.

3178. Cimex ——.

Locality: Ulverston, England. Horizon: Pleistocene.

1862. Stainton. Bolton, Quart. journ. geol. soc. Lond., xviii, pt. i: 274–275.
1888. Bell. Entom., xxi: 2.

3179. Cixius ——. (Fulgoridæ.)

Locality: Prussian amber. Horizon: Ligurian.

1845. Berendt. Bernst. befindl. organ. reste vorw., i: 55.

3180. Cixius —— (2 sp.). (Fulgoridæ.)

Locality: Brunstatt, Alsatia. Horizon: Middle Oligocene.

1890. Foerster. In litt.

3181. Cixius ——. (Fulgoridæ.)

Locality: Prussian amber. Horizon: Ligurian.

1856. Menge. Progr. petrischule Danzig, 1856: 19.

3182. Cixius fraternus. (Fulgoridæ.)

Locality: Prussian amber. Horizon: Ligurian.

1856. Germ.-Ber. Berendt, Bernst. befindl. organ. reste vorw., ii, th. i: 14–15.

3183. Cixius gracilis. (Fulgoridæ.)

Locality: Prussian amber. Horizon: Ligurian.

1856. Germ.-Ber. Berendt, Bernst. befindl. organ. reste vorw., ii, th. i: 16. *Pl.* 1, *fig.* 25.

3184. Cixius? hesperidum. (Fulgoridæ.)

Locality: Green River, Wyo. Horizon: Oligocene.

1878. Scudder. Bull. U. S. geol. surv. terr., iv: 772–773.
1890. " Tert. ins. N. A., 287. *Pl.* 6, *fig.* 19.

3185. Cixius insignis. (Fulgoridæ.)

Locality: Prussian amber. Horizon: Ligurian.

1856. Germ.-Ber. Berendt, Bernst. befindl. organ. reste vorw., ii, th. i: 13–14. *Pl.* 1, *fig.* 20.

3186. Cixius loculatus. (Fulgoridæ.)

Compared with C. seriatus, Brazil.

Locality: Prussian amber. Horizon: Ligurian.

1856. Germ.-Ber. Berendt, Bernst. befindl. organ. reste vorw., ii, th. i: 15–16. *Pl.* 1, *fig.* 24.

3187. Cixius longirostris. (Fulgoridæ.)

Locality: Prussian amber. Horizon: Ligurian.

1856. Germ.-Ber. Berendt, Bernst. befindl. organ. reste vorw., ii, th. i: 15. *Pl.* 1, *fig.* 22.

3188. Cixius? proavus. (Fulgoridæ.)

Locality: Florissant, Colo. Horizon: Oligocene.

1890. Scudder. Tert. ins. N. A., 287. *Pl.* 19, *fig.* 14.

3189. Cixius sieboldtii. (Fulgoridæ.)

Locality: Prussian amber. Horizon: Ligurian.

1856. Germ.-Ber. Berendt, Bernst. befindl. organ. reste vorw., ii, th. i: 14. *Pl.* 1, *fig.* 21.

3190. Cixius succineus. (Fulgoridæ.)

Locality: Prussian amber. Horizon: Ligurian.

1856. Germ.-Ber. Berendt, Bernst. befindl. organ. reste vorw., ii, th. i: 15. *Pl.* 1, *fig.* 23.

3191. Cixius testudinarius. (Fulgoridæ.)

Locality: Prussian amber. Horizon: Ligurian.

1856. Germ.-Ber. Berendt, Bernst. befindl. organ. reste vorw., ii, th. i: 13. *Pl.* 1, *fig.* 19.

3192. Cixius vitreus. (Fulgoridæ.)

Compared with C. nervosus, Europe.

Locality: Prussian amber. Horizon: Ligurian.

1856. Germ.-Ber. Berendt, Bernst. befindl. organ. reste vorw., ii, th. i: 12–13. *Pl.* 1, *fig.* 18.

3193. Clastoptera comstocki. (Cercopidæ.)

Locality: Florissant, Colo. Horizon: Oligocene.

1890. Scudder. Tert. ins. N. A., 338. *Pl.* 19, *fig.* 22.

3194. Closterocoris elegans. (Capsidæ.)

Locality: Florissant, Colo. Horizon: Oligocene.

1890. Scudder. Tert. ins. N. A., 363. *Pl.* 24, *fig.* 7.

3195. Coccus avitus. (Coccidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1856. Menge. Progr. petrischule Danzig, 1856: 17.

3196. Coccus termitinus. (Coccidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1856. Menge. Progr. petrischule Danzig, 1856: 17.

3197. Cœlidia columbiana. (Jassides.)

Locality: Similkameen River, British Columbia. Horizon: ———

1879. Scudder. Rep. progr. geol. surv. Can., 1877-'78: 185B.
1879. " Ins. tert. Nicola, 10.
1890. " Tert. ins. N. A., 313. *Pl.* 2, *fig.* 13.

3198. Cœlidia wyomingensis. (Jassides.)

Locality: Twin Creek, Wyo. Horizon: ———.

1890. Scudder. Tert. ins. N. A., 313–314. *Pl.* 4, *fig.* 8.

3199. Cophocoris tenebricosus. (Lygæidæ.)

Locality: Florissant, Colo. Horizon: Oligocene.

1890. Scudder. Tert. ins. N. A., 391.

3200. Coptochromus manium. (Lygæidæ.)

Locality: Florissant, Colo. Horizon: Oligocene.

1890. Scudder. Tert. ins. N. A., 405.

Coræus ———. See Coreus ———.

3201. Coreites crassus. (Coreidæ.)

Locality: Radoboj, Croatia. Horizon: Mayencian.

1853. Heer. Insektenf. tertiärg. Oeningen, iii: 56–57. *Pl.* 4, *fig.* 10.
1855. " Ber. oesterreich. litt., 1850–'53: 201.
1856. Giebel. Insect. d. vorwelt, 352.

3202. Coreites oblongus. (Coreidæ.)

Locality: Radoboj, Croatia. Horizon: Mayencian.

1853. Heer. Insektenf. tertiärg. Oeningen, iii: 57. *Pl.* 4, *fig.* 11.
1856. Giebel. Insect. d. vorwelt, 353.

3203. Coreites redemtus. (Coreidæ.)

Locality: Oeningen, Baden. Horizon: Tortonian.

1853. Heer. Insektenf. tertiärg. Oeningen, iii: 57–58. *Pl.* 4, *fig.* 12.
1856. Giebel. Insect. d. vorwelt, 353.

3204. Coreus ——. (Coreidæ.)

Locality: Aix, France. Horizon: Ligurian.
1829. Serres. Géogn. terrains tert., 227 (Coræus).

3205. Corimalæna ——. (Pentatomidæ.)

Locality: Florissant, Colo. Horizon: Oligocene.
1885. Scudder. Zittel, Handb. palaeont., i, th. ii: 786.
1886. " Zittel-Barrois, Traité de paléont., ii: 786.
1886. " Bull. U. S. geol. surv., No. 31: 64.

Corisa fasciolata. See Corixa fasciolata.

3206. Corixa ——. (Corixidæ.)

Locality: Florissant, Colo. Horizon: Oligocene.
1881. Scudder. Bull. U. S. geol. surv. terr., vi: 292.
1883. " Ann. rep. U. S. geol. surv. terr., xii: 282.

3207. Corixa fasciolata. (Corixidæ.)

Locality: Oeningen, Baden. Horizon: Tortonian.
1853. Heer. Insektenf. tertiärg. Oeningen, iii: 86–87 (Corisa). *Pl.* 10, *fig.* 12.
1856. Giebel. Insect. d. vorwelt, 372 (Corisa).

3208. Corixa immersa. (Corixidæ.)

Compared with C. hellensii Sahlb., Europe.
Locality: Florissant, Colo. Horizon: Oligocene.
1890. Scudder. Tert. ins. N. A., 345–348. *Pl.* 22, *fig.* 16.

3209. Corixa pullus. (Corixidæ.)

Locality: Stösschen, Austria. Horizon: Miocene.
1859. Heyden. Palaeontogr., viii: 10–11. *Pl.* 1, *fig.* 13.

3210. Corixa vanduzeei. (Corixidæ.)

Compared with C. interrupta Say, United States; C. præusta Fieb., Europe.
Locality: Florissant, Colo. Horizon: Oligocene.
1890. Scudder. Tert. ins. N. A., 344–345. *Pl.* 22, *fig.* 17.

3211. Corizus ——. (Coreidæ.)

Compared with C. hyoscyami Linn.

Locality: Aix, France. Horizon: Ligurian.
1829. Curtis. Edinb. new phil. journ., vii: 296.
1829. " Murchison-Lyell, Tert. form. Aix, 12.

3212. Corizus abditivus. (Coreidæ.)

Locality: Florissant, Colo. Horizon: Oligocene.
1890. Scudder. Tert. ins. N. A., 433–434. *Pl.* 25, *fig.* 5; *pl.* 26, *fig.* 4.

3213. Corizus boyeri. (Coreidæ.)

Locality: Aix, France. Horizon: Ligurian.
1847. Hope. Trans. ent. soc. Lond., iv: 255. *Pl.* 19, *figs.* 3, 3*.
See also Pachymerus boyeri.

3214. Corizus celatus. (Coreidæ.)

Locality: Florissant, Colo. Horizon: Oligocene.

1890. Scudder. Tert. ins. N. A., 433. *Pl.* 27, *fig.* 15.

3215. Corizus guttatus. (Coreidæ.)

Locality: Green River, Wyo. Horizon: Oligocene.

1890. Scudder. Tert. ins. N. A., 434–435. *Pl.* 7, *fig.* 11.
See also Reduvius guttatus.

3216. Corizus somnurnus. (Coreidæ.)

Locality: Florissant, Colo. Horizon: Oligocene.

1890. Scudder. Tert. ins. N. A., 434.

3217. Cryptochromus letatus. (Lygæidæ.)

Locality: Florissant, Colo. Horizon: Oligocene.

1890. Scudder. Tert. ins. N. A., 409.

3218. Ctereacoris primigenus. (Lygæidæ.)

Locality: Florissant, Colo. Horizon: Oligocene.

1890. Scudder. Tert. ins. N. A., 394–395.

3219. Cydamus robustus. (Coreidæ.)

Locality: Florissant, Colo. Horizon: Oligocene.

1890. Scudder. Tert. ins. N. A., 420–421. *Pl.* 26, *fig.* 3.

3220. Cydnopsis atavina. (Pentatomidæ.)

Locality: Oeningen, Baden. Horizon: Tortonian.

1853. Heer. Insektenf. tertiärg. Oeningen, iii: 18. *Pl.* 1, *fig.* 9.
1856. Giebel. Insect. d. vorwelt, 337.

3221. Cydnopsis brevicollis. (Pentatomidæ.)

Locality: Radoboj, Croatia. Horizon: Mayencian.

1853. Heer. Insektenf. tertiärg. Oeningen, iii: 21–22. *Pl.* 2, *fig.* 1; *pl.* 6, *fig.* 11.
1855. " Ber. oesterreich. litt., 1850–'53: 200.
1866. Giebel. Insect. d. vorwelt, 338.

3222. Cydnopsis coleopteroides. (Pentatomidæ.)

Locality: Radoboj, Croatia. Horizon: Mayencian.

1853. Heer. Insektenf. tertiärg. Oeningen, iii: 16–17. *Pl.* 1, *fig.* 7; *pl.* 6, *fig.* 6.
1855. " Ber. oesterreich. litt., 1850–'53: 199.
1856. Giebel. Insect. d. vorwelt, 337.

3223. Cydnopsis deleta. (Pentatomidæ.)

Locality: Oeningen, Baden. Horizon: Tortonian.

1853. Heer. Insektenf. tertiärg. Oeningen, iii: 17–18. *Pl.* 1, *fig.* 8; *pl.* 6, *fig.* 7.
1856. Giebel. Insect. d. vorwelt, 337.

3224. Cydnopsis exilis. (Pentatomidæ.)

Locality: Oeningen, Baden. Horizon: Tortonian.

1853. Heer. Insektenf. tertiärg. Oeningen, iii: 127. *Pl.* 15, *fig.* 7.
1856. Giebel. Insect. d. vorwelt, 338.

3225. Cydnopsis haidingeri. (Pentatomidæ.)

Localities: Oeningen, Baden; Radoboj, Croatia. Horizons: Tortonian, Mayencian.

1853. Heer. Insektenf. tertiärg. Oeningen, iii: 15–16, 127. *Pl.* 1, *fig.* 6; *pl.* 6, *fig.* 5.
1855. " Ber. oesterreich. litt., 1850–'53: 199.
1856. Giebel. Insect. d. vorwelt, 336–337.

3226. Cydnopsis heeri. (Pentatomidæ.)

Locality: Aix, France. Horizon: Ligurian.

1877. Oustalet. Bull. soc. philom. Paris, (6), xi, 1874: 14–16.

3227. Cydnopsis pygmæa. (Pentatomidæ.)

Locality: Oeningen, Baden. Horizon: Tortonian.

1853. Heer. Insektenf. tertiärg. Oeningen, iii: 22. *Pl.* 2, *fig.* 2; *pl.* 6, *fig.* 12.
1856. Giebel. Insect. d. vorwelt, 338.

3228. Cydnopsis sagittifera. (Pentatomidæ.)

Locality: Oeningen, Baden. Horizon: Tortonian.

1853. Heer. Insektenf. tertiärg. Oeningen, iii: 23. *Pl.* 2, *fig.* 3; *pl.* 6, *fig.* 13.
1856. Giebel. Insect. d. vorwelt, 338–339.

3229. Cydnopsis scutellaris. (Pentatomidæ.)

Locality: Radoboj, Croatia. Horizon: Mayencian.

1853. Heer. Insektenf. tertiärg. Oeningen, iii: 21. *Pl.* 1, *fig.* 13; *pl.* 6, *fig.* 10.
1855. " Ber. oesterreich. litt., 1850–'53: 200.
1856. Giebel. Insect. d. vorwelt, 338.

3230. Cydnopsis tertiaria. (Pentatomidæ.)

Localities: Oeningen, Baden; Radoboj, Croatia. Horizons: Tortonian, Mayencian.

1853. Heer. Insektenf. tertiärg. Oeningen, iii: 18–20. *Pl.* 1, *figs.* 10*a–l*; *pl.* 6, *fig.* 9.
1855. " Ber. oesterreich. litt., 1850–'53: 199–200.
1856. Giebel. Insect. d. vorwelt, 337–338.
1853–'56. Bronn. Lethæa géogn., 3e aufl., iii: 643–644. *Pl.* 42', *fig.* 20*ab*.
1865. Heer. Urwelt der Schweiz, 390. *Fig.* 300, on *p.* 391.
1872. " Monde prim. Suisse, 479. *Fig.* 300.
1876. " Prim. world Switz., ii: 49. *Fig.* 300.
1879. " Urwelt der Schweiz, 2e aufl., 416. *Fig.* 342, on *p.* 417.

3231. Cydnus ———. (Pentatomidæ.)

Compared with C. albomarginatus Fabr.

Locality: Aix, France. Horizon: Ligurian.

1829. Curtis. Edinb. new phil. journ., vii: 296.
1829. " Murchison-Lyell, Tert. form. Aix, 12.

3232. Cydnus ——— (19 sp.). (Pentatomidæ.)

Locality: Brunstatt, Alsatia. Horizon: Middle Oligocene.

1890. Foerster. In litt.

3233. Cydnus (vic.) ——. (Pentatomidæ.).

Locality: Rocky River, Sydney Flats, Australia. **Horizon:** ——.

1870. Moore. Quart. journ. geol. soc. Lond., xxvi: 263. *Pl.* 18, *fig.* 11.

3234. Cydnus costæ. (Pentatomidæ.)

Locality: Aix, France. **Horizon:** Ligurian.

1847. Hope. Ann. accad. aspir. nat. Napoli, 1847: 6–7. *Pl.* 10, *fig.* 4.
1847. " Descr. ins. foss., 6–7. *Pl.*, *fig.* 4.

3235. Cydnus ? mamillanus. (Pentatomidæ.)

Locality: Green River, Wyo. **Horizon:** Oligocene.

1878. Scudder. Bull. U. S. geol. surv. terr., iv: 770.
See also Procydnus mamillanus.

3236. Cydnus œningensis. (Pentatomidæ.)

Locality: Oeningen, Baden. **Horizon:** Tortonian.

1853. Heer. Insektenf. tertiärg. Oeningen, iii: 12–13. *Pl.* 1, *fig.* 5; *pl.* 6, *fig.* 4.
1856. Giebel. Insect. d. vorwelt, 336.
1865. Heer. Urwelt der Schweiz, 359.
1872. " Monde prim. Suisse, 441.
1876. " Prim. world Switz., ii: 14.
1879. " Urwelt der Schweiz, 2e aufl., 385.

3237. Cyrtomenus concinnus. (Pentatomidæ.)

Compared with C. mutabilis Perty.

Locality: Green River, Wyo. **Horizon:** Oligocene.

1878. Scudder. Bull. U. S. geol. surv. terr., iv: 769.
1890. " Tert. ins. N. A., 451–452. *Pl.* 7, *fig.* 14.

3238. Delphax ——. (Fulgoridæ.)

Locality: ——. **Horizon:** ——.

1846. Giebel. Paläozool., 269.

3239. Delphax senilis. (Fulgoridæ.)

Locality: White River, Colo. **Horizon:** Oligocene.

1877. Scudder. Bull. U. S. geol. surv. terr., iii: 760.
1890. " Tert. ins. N. A., 295. *Pl.* 5, *fig.* 95.

3240. Deltocephalus ——. (Jassides.)

Locality: Brunstatt, Alsatia. **Horizon:** Middle Oligocene.

1890. Foerster. In litt.

3241. Diaplegma abductum. (Fulgoridæ.)

Locality: Florissant, Colo. **Horizon:** Oligocene.

1890. Scudder. Tert. ins. N. A., 290–291. *Pl.* 15, *fig.* 8.

3242. Diaplegma haldemani. (Fulgoridæ.)

Locality: Florissant, Colo. **Horizon:** Oligocene.

1890. Scudder. Tert. ins. N. A., 289–290.

3243. Diaplegma obdormitum. (Fulgoridæ.)

Locality: Green River, Wyo. **Horizon:** Oligocene.

1890. Scudder. Tert. ins. N. A., 292.

3244. Diaplegma occultorum. (Fulgoridæ.)

Locality: Florissant, Colo. Horizon: Oligocene.

1890. Scudder. Tert. ins. N. A., 291–292.

3245. Diaplegma ruinosum. (Fulgoridæ.)

Locality: Florissant, Colo. Horizon: Oligocene.

1890. Scudder. Tert. ins. N. A., 292.

3246. Diaplegma venerabile. (Fulgoridæ.)

Locality: Florissant, Colo. Horizon: Oligocene.

1890. Scudder. Tert. ins. N. A., 291.

3247. Diaplegma veterascens. (Fulgoridæ.)

Locality: Florissant, Colo. Horizon: Oligocene.

1890. Scudder. Tert. ins. N. A., 290.

3248. Dichrooscytus ——. (Capsidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1890. Scudder. Tert. ins. N. A., 362.

3249. Dictyophara bouvei. (Fulgoridæ.)

Locality: Florissant, Colo. Horizon: Oligocene.

1890. Scudder. Tert. ins. N. A., 286. *Pl.* 21, *fig.* 16.

3250. Dictyophorites tingitinus. (Jassides.)

Locality: Radoboj, Croatia. Horizon: Mayencian.

1853. Heer. Insektenf. tertiärg. Oeningen, iii: 115–116. *Pl.* 13, *fig.* 6.
1855. " Ber. oesterreich. litt., 1850–'53: 203.
1856. Giebel. Insect. d. vorwelt, 386.
1885. Scudder. Zittel, Handb. palaeont., i, th. ii: 781. *Fig.* 990.
1886. " Zittel-Barrois, Traité de paléont., ii: 781. *Fig.* 1007.

3251. Diplonychus rotundatus. (Nepidæ.)

Locality: Oeningen, Baden. Horizon: Tortonian.

1853. Heer. Insektenf. tertiärg. Oeningen, iii: 85–86. *Pl.* 10, *fig.* 10.
1856. Giebel. Insect. d. vorwelt, 371.
1865. Heer. Urwelt der Schweiz, 392.
1872. " Monde prim. Suisse, 481.
1876. " Prim. world Switz., ii: 51.
1879. " Urwelt der Schweiz, 2^e aufl., 418.

3252. Discostoma ——. (Pentatomidæ.)

Locality: Florissant, Colo. Horizon: Oligocene.

1890. Scudder. Tert. ins. N. A., 452. *Pl.* 22, *fig.* 6.

3253. Docimus psylloides. (Jassides.)

Locality: Florissant, Colo. Horizon: Oligocene.

1890. Scudder. Tert. ins. N. A., 314–315. *Pl.* 19, *figs.* 6, 17.

3254. Dorthesia ——. (Coccidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1856. Menge. Progr. petrischule Danzig, 1856: 18.

3255. Dysdercus cinctus. (Lygæidæ.)

Locality: Florissant, Colo. Horizon: Oligocene.

1890. Scudder. Tert. ins. N. A., 410. *Pl.* 24, *figs.* 11, 13, 14.

3256. Dysdercus unicolor. (Lygæidæ.)

Locality: Florissant, Colo. Horizon: Oligocene.

1890. Scudder. Tert. ins. N. A., 410.

3257. Elidiptera regularis. (Fulgoridæ.)

Locality: Florissant, Colo. Horizon: Oligocene.

1890. Scudder. Tert. ins. N. A., 297. *Pl.* 19, *fig.* 13.

3258. Eothes elegans. (Reduviidæ.)

Locality: Florissant, Colo. Horizon: Oligocene.

1890. Scudder. Tert. ins. N. A., 355–356. *Pl.* 26, *fig.* 5.

3259. Eotingis antennata. (Tingididæ.)

Locality: Florissant, Colo. Horizon: Oligocene.

1890. Scudder. Tert. ins. N. A., 360. *Pl.* 23, *figs.* 1, 3.

3260. Eotingis quinquecarinata. (Tingididæ.)

Locality: Prussian amber. Horizon: Ligurian.

1890. Scudder. Tert. ins. N. A., 359–360.
See also Tingis quinquecarinata.

3261. Etirocoris infernalis. (Coreidæ.)

Locality: Florissant, Colo. Horizon: Oligocene.

1890. Scudder. Tert. ins. N. A., 426. *Pl.* 26, *fig.* 16.

3262. Eucorites serescens. (Lygæidæ.)

Locality: Florissant, Colo. Horizon: Oligocene.

1890. Scudder. Tert. ins. N. A., 392.

3263. Eurydema arcuata. (Pentatomidæ.)

Locality: Oeningen, Baden. Horizon: Tortonian.

1853. Heer. Insektenf. tertiärg. Oeningen, iii: 36. *Pl.* 2, *fig.* 15; *pl.* 7, *fig.* 9.
1856. Giebel. Insect. d. vorwelt, 344–345.

3264. Eurydema brevicollis. (Pentatomidæ.)

Locality: Oeningen, Baden. Horizon: Tortonian.

1853. Heer. Insektenf. tertiärg. Oeningen, iii: 36–37. *Pl.* 2, *fig.* 17; *pl.* 7, *fig.* 10.
1856. Giebel. Insect. d. vorwelt, 345.

3265. Eurydema effossa. (Pentatomidæ.)

Locality: Oeningen, Baden. Horizon: Tortonian.

1853. Heer. Insektenf. tertiärg. Oeningen, iii: 37. *Pl.* 2, *fig.* 16; *pl.* 7, *fig.* 11.
1856. Giebel. Insect. d. vorwelt, 345.

3266. Eurydema impudica. (Pentatomidæ.)

Locality: Oeningen, Baden. Horizon: Tortonian.

1853. Heer. Insektenf. tertiärg. Oeningen., iii: 35–36, 127–128. *Pl.* 3, *fig.* 1; *pl.* 7, *fig.* 8; *pl.* 14, *fig.* 21.
1856. Giebel. Insect. d. vorwelt, 344.

3267. Eurygaster ——. (Pentatomidæ.)

Locality: Brunstatt, Alsatia. Horizon: Middle Oligocene.

1890. Foerster. In litt.

3268. Eusarcoris —— (5 sp.). (Pentatomidæ.)

Locality: Brunstatt, Alsatia. Horizon: Middle Oligocene.

1890. Foerster. In litt.

3269. Eusarcoris pinguis. (Pentatomidæ.)

Locality: Oeningen, Baden. Horizon: Tortonian.

1853. Heer. Insektenf. tertiärg. Oeningen, iii: 38–39. *Pl.* 3, *fig.* 4; *pl.* 8, *fig.* 2.
1856. Giebel. Insect. d. vorwelt, 345–346.

3270. Eusarcoris prodromus. (Pentatomidæ.)

Locality: Oeningen, Baden. Horizon: Tortonian.

1853. Heer. Insektenf. tertiärg. Oeningen, iii: 37–38. *Pl.* 3, *fig.* 3; *pl.* 8, *fig.* 1.
1856. Giebel. Insect. d. vorwelt, 345.

3271. Euschistus antiquus. (Pentatomidæ.)

Locality: Quesnel, British Columbia. Horizon: ——.

1878. Scudder. Add. ins. fauna Quesn., 3–5.
1878. " Rep. progr. geol. surv. Can., 1876–'77: 459–461.
1878. " Rapp. opér. comm. géol. Can., 1876–'77: 516–518.

See also Teleoschistus antiquus.

3272. Evagoras impressus. (Reduviidæ.)

Locality: Oeningen, Baden. Horizon: Tortonian.

1853. Heer. Insektenf. tertiärg. Oeningen, iii: 83–84. *Pl.* 5, *fig.* 27; *pl.* 10, *fig.* 8.
1856. Giebel. Insect. d. vorwelt, 368.

3273. Exitelus exsanguis. (Lygæidæ.)

Locality: Florissant, Colo. Horizon: Oligocene.

1890. Scudder. Tert. ins. N. A., 408. *Pl.* 27, *fig.* 2.

3274. Ficarasites stigmaticus. (Fulgoridæ.)

Locality: Green River, Wyo. Horizon: Oligocene.

1890. Scudder. Tert. ins. N. A., 301 (stigmaticum). *Pl.* 6, *fig.* 20.

3275. Flata ——. (Fulgoridæ.)

Compared with F. cunicularia.

Locality: Prussian amber. Horizon: Ligurian.

1832. Burmeister. Handb. ent., i: 638.
1836. " Man. ent., 579.

3276. Flata ———. (Fulgoridæ.)

Compared with F. nervosa.

Locality: Prussian amber. Horizon: Ligurian.

1835. Gravenhorst. Uebers. schles. gesellsch. vaterl. cult., 1834: 93.

3277. Florissantia elegans. (Fulgoridæ.)

Locality: Florissant, Colo. Horizon: Oligocene.

1890. Scudder. Tert. ins. N. A., 294. *Pl.* 19, *fig.* 12.

3278. Fulgora granulosa. (Fulgoridæ.)

Locality: Green River, Wyo. Horizon: Oligocene.

1878. Scudder. Bull. U. S. geol. surv. terr., iv: 771-772.
1890. " Tert. ins. N. A., 284. *Pl.* 6, *fig.* 35.

3279. Fulgora obticescens. (Fulgoridæ.)

Locality: Florissant, Colo. Horizon: Oligocene.

1890. Scudder. Tert. ins. N. A., 285. *Pl.* 19, *fig.* 1.

3280. Fulgora populata. (Fulgoridæ.)

Locality: Green River, Wyo. Horizon: Oligocene.

1890. Scudder. Tert. ins. N. A., 284-285. *Pl.* 7, *fig.* 16.

3281. Fuscus ? fæcatus. (Capsidæ.)

Locality: Florissant, Colo. Horizon: Oligocene.

1890. Scudder. Tert. ins. N. A., 365. *Pl.* 22, *fig.* 5.

3282. Geocoris infernorum. (Lygæidæ.)

Locality: Florissant, Colo. Horizon: Oligocene.

1890. Scudder. Tert. ins. N. A., 381. *Pl.* 23, *figs.* 17, 26.

3283. Gerancon davisii. (Aphides.)

Locality: Florissant, Colo. Horizon: Oligocene.

1890. Scudder. Tert. ins. N. A., 248-249.

3284. Gerancon petrorum. (Aphides.)

Locality: Quesnel, British Columbia. Horizon: ———.

1890. Scudder. Tert. ins. N. A., 249-250. *Pl.* 2, *fig.* 6.
See also Lachnus petrorum.

3285. Gerris ———. (Veliidæ.)

Compared with G. currens.

Locality: Aix, France. Horizon: Ligurian.

1829. Serres. Géogn. terrains tert., 228.

3286. Gypona cinercia. (Jassides.)

Locality: Florissant, Colo. Horizon: Oligocene.

1890. Scudder. Tert. ins. N. A., 308. *Pl.* 19, *fig.* 4.

3287. Hadronema cinerescens. (Capsidæ.)

Locality: Florissant, Colo. Horizon: Oligocene.

1890. Scudder. Tert. ins. N. A., 370 *Pl.* 24, *fig.* 12.

3288. Halobates ———. (Hydrobatidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1845. Berendt. Bernst. befindl. organ. reste vorw., i: 55.

3289. Halobates (or Hydrometra) ——— (larva). (Hydrobatidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1853. Germ.-Ber. Berendt, Bernst. befindl. organ. reste vorw., ii, th. i: 19. *Pl.* 2, *figs.* 7, 8.

3290. Halobates ———. (Hydrobatidæ.)

Locality: Florissant, Colo. Horizon: Oligocene.

1885. Scudder. Zittel, Handb. palaeont., i, th. ii: 783.
1886. " Zittel-Barrois, Traité de paléont, ii: 783.
1886. " Bull. U. S. geol. surv., No. 31: 62.

See also Metrobates æternalis.

3291. Halys bruckmanni. (Pentatomidæ.)

Locality: Oeningen, Baden. Horizon: Tortonian.

1853. Heer. Insektenf. tertiärg. Oeningen, iii: 32–35. *Pl.* 3, *fig.* 2; *pl.* 7, *fig.* 7.
1856. Giebel. Insect. d. vorwelt, 343–344

See also Pentatoma bruckmanni.

3292. Halys spectabilis. (Pentatomidæ.)

Locality: Oeningen, Baden. Horizon: Tortonian.

1865. Heer. Urwelt der Schweiz. *Fig.* 299, on *p.* 391.
1872. " Monde prim. Suisse. *Fig.* 299, on *p.* 479.
1876. " Prim. world Switz., ii. *Fig.* 299, on *p.* 49.
1879. " Urwelt der Schweiz, 2^e aufl. *Fig.* 341, on *p.* 417.

3293. Hammapteryx reticulata. (Fulgoridæ.)

Locality: Green River, Wyo. Horizon: Oligocene.

1890. Scudder. Tert. ins. N. A., 298–299. *Pl.* 6, *fig.* 34.

3294. Harmostites œningensis. (Coreidæ.)

Locality: Oeningen, Baden. Horizon: Tortonian.

1853. Heer. Insektenf. tertiärg. Oeningen, iii: 49–50. *pl.* 4, *fig.* 4; *pl.* 9, *fig.* 1.
1853–'56. Bronn. Lethæa geogn., 3^e aufl., iii: 642–643. *Pl.* 42′, *figs.* 18*ab*.
1856. Giebel. Insect. d. vorwelt, 350.

3295. Harpactor ———. (Reduviidæ.)

Locality: Brunstatt Alsatia. Horizon: Middle Oligocene.

1890. Foerster. In litt.

3296. Harpactor bruckmanni. (Reduviidæ.)

Locality: Oeningen, Baden. Horizon: Tortonian.

1853. Heer. Insektenf. tertiärg. Oeningen, iii: 82. *Pl.* 5, *fig.* 24.
1856. Giebel. Insect. d. vorwelt, 367.

3297. Harpactor constrictus. (Reduviidæ.)

Locality: Oeningen, Baden. Horizon: Tortonian.

1853. Heer. Insektenf. tertiärg. Oeningen, iii: 80–81. *Pl.* 5, *fig.* 22; *pl.* 10, *fig.* 5.
1856. Giebel. Insect. d. vorwelt, 366.

3298. Harpactor gracilis. (Reduviidæ.)

Locality: Radoboj, Croatia. Horizon: Mayencian.

1853.	Heer.	Insektenf. tertiärg. Oeningen, iii: 81–82. *Pl.* 5, *fig.* 23; *pl.* 10, *fig.* 6.
1855.	"	Ber. oesterreich. litt., 1850–'53: 201.
1856.	Giebel.	Insect. d. vorwelt, 367.

3299. Harpactor longipes. (Reduviidæ.)

Locality: Oeningen, Baden. Horizon: Tortonian.

1853.	Heer.	Insektenf. tertiärg. Oeningen, iii: 78. *Pl.* 5, *fig.* 20; *pl.* 10, *fig.* 3.
1856.	Giebel.	Insect. d. vorwelt, 366.

3300. Harpactor maculipes. (Reduviidæ.)

Locality: Oeningen, Baden. Horizon: Tortonian.

1853.	Heer.	Insektenf. tertiärg. Oeningen, iii: 79–80, 132. *Pl.* 5, *fig.* 21; *pl.* 10, *fig.* 4; *pl.* 15, *fig.* 10.
1856.	Giebel.	Insect. d. vorwelt, 366.
1865.	Lyell.	Elem. geol., 6th ed., 255. *Fig.* 193.
1865.	Heer.	Urwelt der Schweiz. *Fig.* 306, on *p.* 391.
1872.	"	Monde prim. Suisse. *Fig.* 306, on *p.* 479.
1876.	"	Prim. world Switz., ii. *Fig.* 306, on *p.* 49.
1879.	"	Urwelt der Schweiz, 2^e aufl. *Fig.* 348, on *p.* 417.
1885.	Scudder.	Zittel, Handb. palaeont., i, th. ii: 784. *Fig.* 997.
1886.	"	Zittel-Barrois, Traité de paléont., ii: 783. *Fig.* 1014.

3301. Harpactor obsoletus. (Reduviidæ.)

Locality: Oeningen, Baden. Horizon: Tortonian.

1853.	Heer.	Insektenf. tertiärg. Oeningen, iii: 82. *Pl.* 5, *fig.* 25.
1856.	Giebel.	Insect. d. vorwelt, 367.

3302. Harpocera ———. (Capsidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1890.	Scudder.	Tert. ins. N. A., 362.

3303. Heeria fœda. (Coreidæ.)

Locality: Florissant, Colo. Horizon: Oligocene.

1890.	Scudder.	Tert. ins. N. A., 432.

3304. Heeria gulosa. (Coreidæ.)

Locality: Florissant, Colo. Horizon: Oligocene.

1890.	Scudder.	Tert. ins. N. A., 431. *Pl.* 27, *figs.* 5, 12, 18; *pl.* 28, *fig.* 17.

3305. Heeria lapidosa. (Coreidæ.)

Locality: Florissant, Colo. Horizon: Oligocene.

1890.	Scudder.	Tert. ins. N. A., 432. *Pl.* 27, *figs.* 3, 19.

3306. Heliothrips clypeata. (Physapodes.)

Locality: Rott, Rhenish Prussia. Horizon: Aquitanian.

1887.	Schlechtend.	Zeitschr. ges. naturw., lx: 589–591. *Pl.* 5, *fig.* 24.

3307. Heliothrips cucullata. (Physapodes.)

Locality: Rott, Rhenish Prussia. Horizon: Aquitanian.

1887.	Schlechtend.	Zeitschr. ges. naturw., lx: 582–586. *Pl.* 5, *figs.* 21*a–d*, 22*a*, 22*AB*.

3308. Heliothrips frechi. (Physapodes.)

Locality: Rott, Rhenish Prussia. **Horizon:** Aquitanian.

1887. Schlechtend. Zeitschr. ges. naturw., lx: 591–592. *Pl.* 4, *figs.* 25, 25*a*.

3309. Heliothrips longipes. (Physapodes.)

Locality: Rott, Rhenish Prussia. **Horizon:** Aquitanian.

1887. Schlechtend. Zeitschr. ges. naturw., lx: 586–589. *Pl.* 4, *figs.* 23, 23*a*.

3310. Heterogaster ——— (2 sp.). (Lygæidæ.)

Locality: Brunstatt, Alsatia. **Horizon:** Middle Oligocene.

1890. Foerster. In litt.

3311. Heterogaster antiquus. (Lygæidæ.)

Locality: Aix, France. **Horizon:** Ligurian.

1853. Heer. Insektenf. tertiärg. Oeningen, iii: 68–69. *Pl.* 5, *fig.* 11; *pl.* 9, *fig.* 14.
1856. " Viert. naturf. gesellsch. Zürich, i: 39.
1856. Giebel. Insect. d. vorwelt, 359.

3312. Heterogaster pumilio. (Lygæidæ.)

Locality: Aix, France. **Horizon:** Ligurian.

1853. Heer. Insektenf. tertiärg. Oeningen, iii: 69. *Pl.* 5, *fig.* 12; *pl.* 9, *fig.* 15.
1856. " Viert. naturf. gesellsch. Zürich, i: 39.
1856. Giebel. Insect. d. vorwelt, 359.

3313. Heterogaster radobojanus. (Lygæidæ.)

Locality: Radoboj, Croatia. **Horizon:** Mayencian.

1853. Heer. Insektenf. tertiärg. Oeningen, iii: 69–70. *Pl.* 5, *fig.* 13; *pl.* 9, *fig.* 16.
1855. " Ber. oesterreich. litt., 1850–'53: 201.
1856. Giebel. Insect. d. vorwelt, 359.

3314. Heterogaster redivivus. (Lygæidæ.)

Locality: Radoboj, Croatia. **Horizon:** Mayencian.

1853. Heer. Insektenf. tertiärg. Oeningen, iii: 71, 131. *Pl.* 5, *fig.* 15; *pl.* 14, *fig.* 17.
1855. " Ber. oesterreich. litt., 1850–'53: 201.
1856. Giebel. Insect. d. vorwelt, 360.

3315. Heterogaster tristis. (Lygæidæ.)

Compared with H. urticæ F.

Locality: Oeningen, Baden. **Horizon:** Tortonian.

1865. Heer. Urwelt der Schweiz, 392.
1872. " Monde prim. Suisse, 480.
1876. " Prim. world Switz., ii: 50.
1879. " Urwelt der Schweiz, 2ᵉ aufl., 416.

3316. Heterogaster troglodytes. (Lygæidæ.)

Locality: Radoboj, Croatia. **Horizon:** Mayencian.

1853. Heer. Insektenf. tertiärg. Oeningen, iii: 70–71, 131. *Pl.* 5, *fig.* 14; *pl.* 9, *fig.* 17; *pl.* 14, *fig.* 18.
1855. " Ber. oesterreich. litt., 1850–'53: 201.
1856. Giebel. Insect. d. vorwelt, 360.

3317. Homodemus ———. (Capsidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1890. Scudder. Tert. ins. N. A., 362.

3318 Hoplomachus ——— (2 sp.). (Capsidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1890. Scudder. Tert. ins. N. A., 362.

3319. Hydrometra ———. (Hydrobatidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1845. Berendt. Bernst. befindl. organ. reste vorw., i: 55.

3320. Hydrometra ———. (Hydrobatidæ.)

Locality: Aix, France. Horizon: Ligurian.

1832. Burmeister Handb. ent., i: 640.
1836. " Man. ent., 581.
See also Ploiaria ———.

3321. Hydrometra ———. (Hydrobatidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1856. Menge. Progr. petrischule Danzig, 1856: 20.

Hydrometra ———. See Halobates (or Hydrometra) ———.

3322. Hygrotrechus stâli. (Hydrobatidæ.)

Locality: Similkameen River, British Columbia. Horizon: ———.

1879. Scudder. Rep. progr. geol. surv. Can., 1877-'78: B 183-184.
1879. " Ins. tert. Nicola, 8-9.
See also Telmatrechus stâli.

3323. Hylotoma cineracea. (Cercopidæ.)

Locality: Radoboj, Croatia. Horizon: Mayencian.

1843. Charpentier. Verhandl. leop.-carol. akad. naturf., xx: 409. *Pl.* 23, *fig.* 1.
1856. Giebel. Insect. d. vorwelt, 153.
See also Cercopis charpentieri.

3324. Hypselonotus lavateri. (Coreidæ.)

Locality: Oeningen, Baden. Horizon: Tortonian.

1853. Heer. Insektenf. tertiärg. Oeningen, iii: 50-51. *Pl.* 4, *fig.* 3; *pl.* 9, *fig.* 2.
1856. Giebel. Insect. d. vorwelt, 350.

3325. Jassopsis evidens. (Jassides.)

Locality: Florissant, Colo. Horizon: Oligocene.

1890. Scudder. Tert. ins. N. A., 312. *Pl.* 19, *fig.* 16.

3326. Jassus ———. (Jassides.)

Locality: Prussian amber. Horizon: Ligurian.

1845. Berendt. Bernst. befindl. organ. reste vorw., i: 55.

3327. Jassus ———. (Jassides.)

Locality: Prussian amber. Horizon: Ligurian.

1831. Burmeister. Oken, Isis, 1831: 1100.
1832. " Handb. ent., i: 638.
1836. " Man. ent., 579.

3328. Jassus ———. (Jassides.)

Locality: Prussian amber. Horizon: Ligurian.

1835. Gravenhorst. Uebers. schles. gesellsch. vaterl. cult., 1834: 93.

3329. Jassus ———. (Jassides.)

Compared with J. atomarius.

Locality: Prussian amber. Horizon: Ligurian.

1835. Gravenhorst. Uebers. schles. gesellsch. vaterl. cult., 1834: 93.

3330. Jassus ———. (Jassides.)

Compared with J. lineatus.

Locality: Prussian amber. Horizon: Ligurian.

1835. Gravenhorst. Uebers. schles. gesellsch. vaterl. cult., 1834: 93.

3331. Jassus ———. (Jassides.)

Compared with J. unifasciatus.

Locality: Prussian amber. Horizon: Ligurian.

1835. Gravenhorst. Uebers. schles. gesellsch. vaterl. cult., 1834: 93.

3332. Jassus immersus. (Jassides.)

Compared with J. subfusculus, Europe.

Locality: Prussian amber. Horizon: Ligurian.

1856. Germ.-Ber. Berendt, Bernst. befindl. organ. reste vorw., ii, th. i: 8–9. *Pl.* 1, *fig.* 11.

3333. Jassus? latebræ. (Jassides.)

Locality: Florissant, Colo. Horizon: Oligocene.

1890. Scudder. Tert. ins. N. A., 308. *Pl.* 20, *fig.* 19.

3334. Jassus spinicornis. (Jassides.)

Compared with J. fumipennis, Europe.

Locality: Prussian amber. Horizon: Ligurian.

1856. Germ.-Ber. Berendt, Bernst. befindl. organ. reste vorw., ii, th. i: 9. *Pl.* 1, *fig.* 12.

3335. Lachnus ———. (Aphides.)

Locality: Prussian amber. Horizon: Ligurian.

1845. Berendt. Bernst. befindl. organ. reste vorw., i: 55.

3336. Lachnus? ———. (Aphides.)

Locality: Radoboj, Croatia. Horizon: Mayencian.

1883. Buckton. Monogr. Brit. aphid., iv. *Pl.* 132, *fig.* 11 (= Heer's figure 5*a*).
See also Aphis morloti.

3337. Lachnus bonneti. (Aphides.)

Locality: (Oeningen ?), Baden. Horizon: Tortonian.

1853.	Heer.	Insektenf. tertiärg. Oeningen, iii: 124–125. *Pl.* 15, *fig.* 1.
1856.	Giebel.	Insect. d. vorwelt, 390.
1883.	Buckton.	Monogr. Brit. aphid., iv: 170. *Pl.* 132, *fig.* 3.

3338. Lachnus cimicoides. (Aphides.)

Locality: Prussian amber. Horizon: Ligurian.

1856.	Germ.-Ber.	Berendt, Bernst. befindl. organ. reste vorw., ii, th. i: 5–6. *Pl.* 1, *fig.* 6.
1883.	Buckton.	Monogr. Brit. aphid., iv: 167 (Aphis in expl. pl.). *Pl.* 131, *fig.* 8.

3339. Lachnus dryoides. (Aphides.)

Compared with L. quercus.

Locality: Prussian amber. Horizon: Ligurian.

1856.	Germ.-Ber.	Berendt, Bernst. befindl. organ. reste vorw., ii, th. i: 4–5. *Pl.* 1, *fig.* 4.
1883.	Buckton.	Monogr. Brit. aphid., iv: 166–167. *Pl.* 131, *figs.* 6–7.

3340. Lachnus glandulosus. (Aphides.)

Locality: Prussian amber. Horizon: Ligurian.

1856.	Menge.	Progr. petrischule Danzig, 1856: 19.

3341. Lachnus longulus. (Aphides.)

Locality: Prussian amber. Horizon: Ligurian.

1856.	Germ.-Ber.	Berendt, Bernst. befindl. organ. reste vorw., ii, th. i: 5. *Pl.* 1, *fig.* 5.
1883.	Buckton.	Monogr. Brit. aphid., iv: 167. *Pl.* 131, *fig.* 9.

3342. Lachnus pectorosus. (Aphides.)

Locality: Radoboj, Croatia. Horizon: Mayencian.

1853.	Heer.	Insektenf. tertiärg. Oeningen, iii: 123–124. *Pl.* 15, *fig.* 2.
1855.	"	Ber. oesterreich. litt., 1850–'53: 203.
1856.	Giebel.	Insect. d. vorwelt, 390.
1883.	Buckton.	Monogr. Brit. aphid., iv: 171–172. *Pl.* 132, *fig.* 8.

3343. Lachnus petrorum. (Aphides.)

Compared with L. pini (Linn.).

Locality: Quesnel, British Columbia. Horizon: ——.

1877.	Scudder.	Rep. progr. geol. surv. Can., 1875–'76: 279.
1877.	"	Ins. tert. Quesn., 14.
1877.	"	Rapp. opér. comm. géol. Can., 1875–'76: 309–310.

See also Gerancon petrorum.

3344. Lachnus quesneli. (Aphides.)

Locality: Quesnel, British Columbia. Horizon: ——.

1878.	Scudder.	Add. ins. fauna Quesn., 5–6.
1878.	"	Rep. progr. geol. surv. Can., 1876–'77: 461–462.
1878.	"	Rapp. opér. comm. géol. Can., 1876–'77: 518–519.

See also Sbenaphis quesneli.

3345. Ledophora producta. (Jassides.)

Locality: Oeningen, Baden. Horizon: Tortonian.

1853.	Heer.	Insektenf. tertiärg. Oeningen, iii: 116–117. *Pl.* 12, *fig.* 12.
1853–'56.	Bronn.	Lethæa geogn., 3e aufl., iii: 641. *Pl.* 42', *figs.* 15*a–d*.
1856.	Giebel.	Insect. d. vorwelt, 386–387.

3346. Leptoscelis humata. (Coreidæ.)

Compared with Pyrrhocoris königi Fabr.

Locality: Sieblos, Rhenish Prussia. Horizon: Aquitanian.

1858.	Heyden.	Palaeontogr., v: 117–119. *Pl.* 23, *fig.* 16.

Ligæus mutilus. See Lygæus mutilus.

3347. Ligyrocoris exsuctus. (Lygæidæ.)

Locality: Florissant, Colo. Horizon: Oligocene.

1890.	Scudder.	Tert. ins. N. A., 385. *Pl.* 24, *fig.* 5.

3348. Limnacis succini. (Hydrobatidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1856.	Germ.-Ber.	Berendt, Bernst. befindl. organ. reste vorw., ii, th. i: 19. *Pl.* 3, *fig.* 18.

3349. Limnobates prodromus. (Limnobatidæ.)

Compared with L. stagnorum L., Europe.

Locality: Oeningen, Baden. Horizon: Tortonian.

1865.	Heer.	Urwelt der Schweiz, 392.
1872.	"	Monde prim. Suisse, 481.
1876.	"	Prim. world Switz., ii: 51.
1879.	"	Urwelt der Schweiz, 2e aufl., 418.

3350. Limnochares antiquus. (Galgulidæ.)

Locality: Rott, Rhenish Prussia. Horizon: Aquitanian.

1862.	Heyden.	Palaeontogr., x: 63. *Pl.* 10, *figs.* 27–29.
1878.	Bertkau.	Verhandl. naturh. ver. preuss. Rheinl., 1878: 346-347, anm.
1885.	"	Sitzungsb. niederrh. gesellsch. natur- u. heilk., 1885: 298–299.
1890.	Scudder.	Tert. ins. N. A., 347.

3351. Linnæa abolita. (Lygæidæ.)

Locality: Florissant, Colo. Horizon: Oligocene.

1890.	Scudder.	Tert. ins. N. A., 398.

3352. Linnæa carcerata. (Lygæidæ.)

Locality: Florissant, Colo. Horizon: Oligocene.

1890.	Scudder.	Tert. ins. N. A., 398–399. *Pl.* 23, *fig.* 2.

3353. Linnæa evoluta. (Lygæidæ.)

Locality: Florissant, Colo. Horizon: Oligocene.

1890.	Scudder.	Tert. ins. N. A., 399. *Pl.* 23, *fig.* 21.

3354. Linnæa gravida. (Lygæidæ.)

Locality: Florissant, Colo. Horizon: Oligocene.

1890.	Scudder.	Tert. ins. N. A., 399. *Pl.* 23, *fig.* 19.

3337. Lachnus bonneti. (Aphides.)

Locality: (Oeningen ?), Baden. Horizon: Tortonian.

1853. Heer. Insektenf. tertiärg. Oeningen, iii: 124–125. *Pl.* 15, *fig.* 1.
1856. Giebel. Insect. d. vorwelt, 390.
1883. Buckton. Monogr. Brit. aphid., iv: 170. *Pl.* 132, *fig.* 3.

3338. Lachnus cimicoides. (Aphides.)

Locality: Prussian amber. Horizon: Ligurian.

1856. Germ.-Ber. Berendt, Bernst. befindl. organ. reste vorw., ii, th. i: 5–6. *Pl.* 1, *fig.* 6.
1883. Buckton. Monogr. Brit. aphid., iv: 167 (Aphis in expl. pl.). *Pl.* 131, *fig.* 8.

3339. Lachnus dryoides. (Aphides.)

Compared with L. quercus.

Locality: Prussian amber. Horizon: Ligurian.

1856. Germ.-Ber. Berendt, Bernst. befindl. organ. reste vorw., ii, th. i: 4–5. *Pl.* 1, *fig.* 4.
1883. Buckton. Monogr. Brit. aphid., iv: 166–167. *Pl.* 131, *figs.* 6–7.

3340. Lachnus glandulosus. (Aphides.)

Locality: Prussian amber. Horizon: Ligurian.

1856. Menge. Progr. petrischule Danzig, 1856: 19.

3341. Lachnus longulus. (Aphides.)

Locality: Prussian amber. Horizon: Ligurian.

1856. Germ.-Ber. Berendt, Bernst. befindl. organ. reste vorw., ii, th. i: 5. *Pl.* 1, *fig.* 5.
1883. Buckton. Monogr. Brit. aphid., iv: 167. *Pl.* 131, *fig.* 9.

3342. Lachnus pectorosus. (Aphides.)

Locality: Radoboj, Croatia. Horizon: Mayencian.

1853. Heer. Insektenf. tertiärg. Oeningen, iii: 123–124. *Pl.* 15, *fig.* 2.
1855. " Ber. oesterreich. litt., 1850–'53: 203.
1856. Giebel. Insect. d. vorwelt, 390.
1883. Buckton. Monogr. Brit. aphid., iv: 171–172. *Pl.* 132, *fig.* 8.

3343. Lachnus petrorum. (Aphides.)

Compared with L. pini (Linn.).

Locality: Quesnel, British Columbia. Horizon: ———.

1877. Scudder. Rep. progr. geol. surv. Can., 1875–'76: 279.
1877. " Ins. tert. Quesn., 14.
1877. " Rapp. opér. comm. géol. Can., 1875–'76: 309–310.

See also Gerancon petrorum.

3344. Lachnus quesneli. (Aphides.)

Locality: Quesnel, British Columbia. Horizon: ———.

1878. Scudder. Add. ins. fauna Quesn., 5–6.
1878. " Rep. progr. geol. surv. Can., 1876–'77: 461–462.
1878. " Rapp. opér. comm. géol. Can., 1876–'77: 518–519.

See also Sbenaphis quesneli.

3345. Ledophora producta. (Jassides.)

Locality: Oeningen, Baden. Horizon: Tortonian.

1853. Heer. Insektenf. tertiärg. Oeningen, iii: 116–117. *Pl.* 12, *fig.* 12.
1853–'56. Bronn. Lethæa geogn., 3e aufl., iii: 641. *Pl.* 42′, *figs.* 15*a–d.*
1856. Giebel. Insect. d. vorwelt, 386–387.

3346. Leptoscelis humata. (Coreidæ.)

Compared with Pyrrhocoris königi Fabr.

Locality: Sieblos, Rhenish Prussia. Horizon: Aquitanian.

1858. Heyden. Palaeontogr., v: 117–119. *Pl.* 23, *fig.* 16.

Ligæus mutilus. See Lygæus mutilus.

3347. Ligyrocoris exsuctus. (Lygæidæ.)

Locality: Florissant, Colo. Horizon: Oligocene.

1890. Scudder. Tert. ins. N. A., 385. *Pl.* 24, *fig.* 5.

3348. Limnacis succini. (Hydrobatidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1856. Germ.-Ber. Berendt, Bernst. befindl. organ. reste vorw., ii, th. i: 19. *Pl.* 3, *fig.* 18.

3349. Limnobates prodromus. (Limnobatidæ.)

Compared with L. stagnorum L., Europe.

Locality: Oeningen, Baden. Horizon: Tortonian.

1865. Heer. Urwelt der Schweiz, 392.
1872. " Monde prim. Suisse, 481.
1876. " Prim. world Switz., ii: 51.
1879. " Urwelt der Schweiz, 2e aufl., 418.

3350. Limnochares antiquus. (Galgulidæ.)

Locality: Rott, Rhenish Prussia. Horizon: Aquitanian.

1862. Heyden. Palaeontogr., x: 63. *Pl.* 10, *figs.* 27–29.
1878. Bertkau. Verhandl. naturh. ver. preuss. Rheinl., 1878: 346–347, anm.
1885. " Sitzungsb. niederrh. gesellsch. natur- u. heilk., 1885: 298–299.
1890. Scudder. Tert. ins. N. A., 347.

3351. Linnæa abolita. (Lygæidæ.)

Locality: Florissant, Colo. Horizon: Oligocene.

1890. Scudder. Tert. ins. N. A., 398.

3352. Linnæa carcerata. (Lygæidæ.)

Locality: Florissant, Colo. Horizon: Oligocene.

1890. Scudder. Tert. ins. N. A., 398–399. *Pl.* 23, *fig.* 2.

3353. Linnæa evoluta. (Lygæidæ.)

Locality: Florissant, Colo. Horizon: Oligocene.

1890. Scudder. Tert. ins. N. A., 399. *Pl.* 23, *fig.* 21.

3354. Linnæa gravida. (Lygæidæ.)

Locality: Florissant, Colo. Horizon: Oligocene.

1890. Scudder. Tert. ins. N. A., 399. *Pl.* 23, *fig.* 19.

3355. **Linnæa holmesii.** (Lygæidæ.)

Locality: Florissant, Colo. Horizon: Oligocene.

1890. Scudder. Tert. ins. N. A., 397. *Pl.* 23, *fig.* 10.

3356. **Linnæa putnami.** (Lygæidæ.)

Locality: Florissant, Colo. Horizon: Oligocene.

1890. Scudder. Tert. ins. N. A., 397–398. *Pl.* 23, *fig.* 4.

3357. **Lithadothrips vetusta.** (Physapodes.)

Locality: White River, Utah. Horizon: Oligocene.

1875. Scudder. Bull. U. S. geol. surv. terr., i: 222.
1875. " Tert. Phys. Col., 2.
1877. " Bull. U. S. geol. surv. terr., iii: 761.
1890. " Tert. ins. N. A., 372. *Pl.* 5, *figs.* 88, 89, 102, 103.

3358. **Lithaphis diruta.** (Aphides.)

Localities: Florissant, Colo.; Green River, Wyo. Horizon: Oligocene.

1890. Scudder. Tert. ins. N. A., 258.

3359. **Lithecphora diaphana.** (Cercopidæ.)

Locality: Florissant, Colo. Horizon: Oligocene.

1890. Scudder. Tert. ins. N. A., 330–331. *Pl.* 21, *fig.* 13.

3360. **Lithecphora murata.** (Cercopidæ.)

Locality: Florissant, Colo. Horizon: Oligocene.

1890. Scudder. Tert. ins. N. A., 331. *Pl.* 21, *figs.* 3, 8.

3361. **Lithecphora setigera.** (Cercopidæ.)

Locality: Florissant, Colo. Horizon: Oligocene.

1890. Scudder. Tert. ins. N. A., 330. *Pl.* 20, *fig.* 22.

3362. **Lithecphora unicolor.** (Cercopidæ.)

Locality: Florissant, Colo. Horizon: Oligocene.

1890. Scudder. Tert. ins. N. A., 331. *Pl.* 21, *figs.* 4, 5, 11, 14.

3363. **Lithochromus extraneus.** (Lygæidæ.)

Locality: Florissant, Colo. Horizon: Oligocene.

1890. Scudder. Tert. ins. N. A., 404. *Pl.* 26, *fig.* 6.

3364. **Lithochromus gardneri.** (Lygæidæ.)

Locality: Florissant, Colo. Horizon: Oligocene.

1890. Scudder. Tert. ins. N. A., 403. *Pl.* 26, *fig.* 10; *pl.* 27, *fig.* 8.

3365. **Lithochromus mortuarius.** (Lygæidæ.)

Locality: Florissant, Colo. Horizon: Oligocene.

1890. Scudder. Tert. ins. N. A., 404. *Pl.* 26, *fig.* 2.

3366. **Lithochromus obstrictus.** (Lygæidæ.)

Locality: Florissant, Colo. Horizon: Oligocene.

1890. Scudder. Tert. ins. N. A., 403–404.

3367. **Lithocoris evulsus.** (Lygæidæ.)

Locality: Florissant, Colo. Horizon: Oligocene.

1890. Scudder. Tert. ins. N. A., 391.

3368. **Lithopsis elongata.** (Fulgoridæ.)

Locality: Green River, Wyo. Horizon: Oligocene.

1890. Scudder. Tert. ins. N. A., 301. *Pl.* 6, *fig.* 28.

3369. **Lithopsis fimbriata.** (Fulgoridæ.)

Locality: Green River, Wyo. Horizon: Oligocene.

1878. Scudder. Bull. U. S. geol. surv. terr., iv: 774.
1885. " Zittel, Handb. paläeont., i, th. ii: 781. *Fig.* 989.
1886. " Zittel-Barrois, Traité de paléont., ii: 781. *Fig.* 1006.
1890. " Tert. ins. N. A., 300. *Pl.* 6, *figs.* 36, 37.

3370. **Locrites copei.** (Cercopidæ.)

Locality: Florissant, Colo. Horizon: Oligocene.

1890. Scudder. Tert. ins. N. A., 323–324. *Pl.* 21, *fig.* 19.

3371. **Locrites haidingeri.** (Cercopidæ.)

Locality: Radoboj, Croatia. Horizon: Mayencian.

1890. Scudder. Tert. ins. N. A., 323.
See also Cercopis haidingeri.

3372. **Locrites whitei.** (Cercopidæ.)

Locality: Florissant, Colo. Horizon: Oligocene

1890. Scudder. Tert. ins. N. A., 324. *Pl.* 21, *fig.* 17.

3373. **Lopus ——.** (Capsidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1890. Scudder. Tert. ins. N. A., 362.

3374. **Lyctocoris terreus.** (Acanthiidæ.)

Locality: Green River, Wyo. Horizon: Oligocene.

1890. Scudder. Tert. ins. N. A., 361. *Pl.* 7, *fig.* 20.
See also Rhyparochromus terreus.

3375. **Lygæites acutus.** (Lygæidæ.)

Locality: Oeningen, Baden. Horizon: Tortonian.

1853. Heer. Insektenf. tertiärg. Oeningen, iii: 131–132. *Pl.* 14, *fig.* 15.
1856. Giebel. Insect. d. vorwelt, 361.

3376. **Lygæites lividus.** (Lygæidæ.)

Locality: Radoboj, Croatia. Horizon: Mayencian.

1853. Heer. Insektenf. tertiärg. Oeningen, iii: 131. *Pl.* 14, *fig.* 14.
1855. " Ber. oesterreich. litt., 1850–'53: 201.
1856. Giebel. Insect. d. vorwelt, 361.

3377. **Lygæites obsoletus.** (Lygæidæ.)

Locality: Oeningen, Baden. Horizon: Tortonian.

1853. Heer. Insektenf. tertiärg. Oeningen, iii: 72. *Pl.* 14, *fig.* 12.
1856. Giebel. Insect. d. vorwelt, 361.

3378. Lygæites ovalis. (Lygæidæ.)

Locality: Oeningen, Baden. Horizon: Tortonian.

1853. Heer. Insektenf. tertiärg. Oeningen, iii: 71-72. *Pl.* 14, *fig.* 11.
1856. Giebel. Insect. d. vorwelt, 360-361.

3379. Lygæites pusillus. (Lygæidæ.)

Locality: Radoboj, Croatia. Horizon: Mayencian.

1853. Heer. Insektenf. tertiärg. Oeningen, iii: 72-73. *Pl.* 14, *fig.* 13.
1856. Giebel Insect. d. vorwelt, 361.

3380. Lygæus ——. (Lygæidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1845. Berendt. Bernst. befindl. organ. reste vorw., i: 55.

3381. Lygæus ——. (Lygæidæ.)

Compared with L. abietis.

Locality: Aix, France. Horizon: Ligurian.

1829. Curtis. Edinb. new phil. journ., vii: 296.
1829. " Murchison-Lyell, Tert. form. Aix, 12.

3382. Lygæus —— (2 sp.). (Lygæidæ.)

Locality: Brunstatt, Alsatia. Horizon: Middle Oligocene.

1890. Foerster. In litt.

3383. Lygæus ——. (Lygæidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1835. Gravenhorst. Uebers. schles. gesellsch. vaterl. cult., 1834: 93.

3384. Lygæus ——. (Lygæidæ.)

Compared with L. compressicornis.

Locality: Aix, France. Horizon: Ligurian.

1829. Serres. Géogn. terrains tert., 227.

3385. Lygæus ——. (Lygæidæ.)

Compared with L. errans.

Locality: Aix, France. Horizon: Ligurian.

1829. Serres. Géogn. terrains tert., 227.

3386. Lygæus ——. (Lygæidæ.)

Compared with L. melanocephalus.

Locality: Aix, France. Horizon: Ligurian.

1829. Serres. Géogn. terrains tert., 227.

3387. Lygæus ——. (Lygæidæ.)

Compared with L. punctum.

Locality: Aix, France. Horizon: Ligurian.

1829. Serres. Géogn. terrains tert., 227.

3388. Lygæus atavinus. (Lygæidæ.)

Locality: Radoboj, Croatia. Horizon: Mayencian.

1853. Heer. Insektenf. tertiärg. Oeningen. iii: 60–61. *Pl.* 4, *fig.* 14; *pl.* 9, *fig.* 6.
1856. Giebel. Insect. d. vorwelt, 355 (attavinus).

Lygæus attavinus. See Lygæus atavinus.

3389. Lygæus dasypus. (Lygæidæ.)

Locality: Oeningen, Baden. Horizon: Tortonian.

1853. Heer. Insektenf. tertiärg. Oeningen, iii: 128–129. *Pl.* 15, *fig.* 8.
1856. Giebel. Insect. d. vorwelt, 354–355.

3390. Lygæus delle-chiaje. (Lygæidæ.)

Locality: Aix, France. Horizon: Ligurian.

1847. Hope. Descr. ins. foss., 6. *Pl.*, *fig.* 3.

3391. Lygæus deprehensus. (Lygæidæ.)

Locality: Sieblos, Rhenish Prussia. Horizon: Aquitanian.

1859. Heyden. Palaeontogr., viii: 16. *Pl.* 3, *fig.* 8.
1860. " Hassenc., Würzb. naturw. zeitschr., i: 79.

3392. Lygæus deucalionis. (Lygæidæ.)

Locality: Radoboj, Croatia. Horizon: Mayencian.

1853. Heer. Insektenf. tertiärg. Oeningen, iii: 59–60. *Pl.* 4, *fig.* 15; *pl.* 9, *fig.* 5.
1855. " Ber. oesterreich. litt., 1850–'53: 201.
1856. Giebel. Insect. d. vorwelt, 354.

3393. Lygæus fæculentus. (Lygæidæ.)

Locality: Florissant, Colo. Horizon: Oligocene.

1890. Scudder. Tert. ins. N. A., 377.

3394. Lygæus fossitius. (Lygæidæ.)

Locality: Sieblos, Rhenish Prussia. Horizon: Aquitanian.

1858. Heyden. Palaeontogr., v: 119. *Pl.* 23, *fig.* 17.

3395. Lygæus mutilus. (Lygæidæ.)

Locality: Krottensee, Bohemia. Horizon: Aquitanian.

1877. Novák. Sitzungsb. akad. wiss. Wien, lxxvi: 81 (Ligæus). *Pl.* 2, *fig.* 6.
1877. " Faun. egerer tertiärb., 11 (Ligæus). *Pl.* 2, *fig.* 6.
1890. Scudder. Tert. ins. N. A., 376 (not a Lygæus).

3396. Lygæus obsolescens. (Lygæidæ.)

Locality: Florissant, Colo. Horizon: Oligocene.

1890. Scudder. Tert. ins. N. A., 377. *Pl.* 24, *fig.* 15.

3397. Lygæus stabilitus. (Lygæidæ.)

Locality: Florissant, Colo. Horizon: Oligocene.

1890. Scudder. Tert. ins. N. A., 376–377. *Pl.* 23, *fig.* 10; *pl.* 24, *fig.* 16.

3398. **Lygæus tinctus.** (Lygæidæ.)

Compared with L. venustus Böb., Europe.

Locality: Oeningen, Baden. Horizon: Tortonian.

1853. Heer. Insektenf. tertiärg. Oeningen, iii: 58–59. *Pl.* 4, *fig.* 13; *pl.* 9, *fig.* 4.
1856. Giebel. Insect. d. vorwelt, 354.
1865. Heer. Urwelt der Schweiz, 362, 391. *Fig.* 301, on *p.* 391.
1872. " Monde prim. Suisse, 444, 480. *Fig.* 301, on *p.* 479.
1876. " Prim. world Switz., ii: 16, 50. *Fig.* 301, on *p.* 49.
1879. " Urwelt der Schweiz, 2ᵉ aufl., 388, 416. *Fig.* 343, on *p.* 417.

3399. **Lygæus ventralis.** (Lygæidæ.)

Locality: Radoboj, Croatia. Horizon: Mayencian.

1853. Heer. Insektenf. tertiärg. Oeningen, iii: 129–130. *Pl.* 15, *fig.* 9.
1855. " Ber. oesterreich. litt., 1850–'53: 201.
1856. Giebel. Insect. d. vorwelt, 355.

3400. **Lygus** ———. (Capsidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1890. Scudder. Tert. ins. N. A., 362.

3401. **Lystra ? leei.** (Fulgoridæ.)

Locality: Green River, Wyo. Horizon: Oligocene.

1890. Scudder. Tert. ins. N. A., 283–284. *Pl.* 7, *fig.* 2.

3402. **Lystra ? richardsoni.** (Fulgoridæ.)

Locality: Green River, Wyo. Horizon: Oligocene.

1878. Scudder. Bull. U. S. geol. surv. terr., iv: 772.
1890. " Tert. ins. N. A., 283. *Pl.* 6, *figs.* 24, 30, 31; *pl.* 7, *figs.* 1, 3.

3403. **Matæoschistus limigenus.** (Pentatomidæ.)

Locality: Florissant, Colo. Horizon: Oligocene.

1890. Scudder. Tert. ins. N. A., 460.

3404. **Mecocephala** ———. (Pentatomidæ.)

Locality: Florissant, Colo. Horizon: Oligocene.

1890. Scudder. Tert. ins. N. A., 464. *Pl.* 28, *fig.* 6.

3405. **Melanothrips extincta.** (Physapodes.)

Locality: White River, Colo. Horizon: Oligocene.

1875. Scudder. Bull. U. S. geol. surv. terr., i: 221.
1875. " Tert. Phys. Colo., 1.
1877. " Bull. U. S. geol. surv. terr., iii: 761.
1890. " Tert. ins. N. A., 371. *Pl.* 5, *figs.* 90, 91.

3406. **Membracites cristatus.** (Jassides.)

Locality: Oeningen, Baden. Horizon: Tortonian.

1853. Heer. Insektenf. tertiärg. Oeningen, iii: 93. *Pl.* 13, *fig.* 12.
1856. Giebel. Insect. d. vorwelt, 378.

3407. Metrobates æternalis. (Hydrobatidæ.)

Locality: Florissant, Colo. Horizon: Oligocene.

1890. Scudder. Tert. ins. N. A., 353–354. *Pl.* 22, *fig.* 15.
See also Halobates ——— Scudder.

3408. Micropus ———. Lygæidæ.)

Locality: Stösschen, Austria. Horizon: Miocene.

1859. Heyden. Palaeontogr., viii: 11. *Pl.* 1, *fig.* 15.

3409. Miris ———. (Capsidæ.)

Locality: Aix, France. Horizon: Ligurian.

1829. Curtis. Edinb. new. phil. journ., vii: 296.
1829. " Murchison-Lyell, Tert. form. Aix, 12.

3410. Miris ———. (Capsidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1835. Gravenhorst. Uebers. schles. gesellsch. vaterl. cult., 1834: 93.

3411. Miris ———. (Capsidæ.)

Compared with M. campestris.

Locality: Prussian amber. Horizon: Ligurian.

1835. Gravenhorst. Uebers. schles. gesellsch. vaterl. cult., 1834: 93.

3412. Miris ———. (Capsidæ.)

Compared with M. populi.

Locality: Prussian amber. Horizon: Ligurian.

1835. Gravenhorst. Uebers. schles. gesellsch. vaterl. cult., 1834: 93.

3413. Miris ———. (Capsidæ.)

Compared with M. rufipennis.

Locality: Prussian amber. Horizon: Ligurian.

1835. Gravenhorst. Uebers. schles. gesellsch. vaterl. cult., 1834: 93.

3414. Miris ———. (Capsidæ.)

Compared with M. tanaceti.

Locality: Prussian amber. Horizon: Ligurian.

1835. Gravenhorst. Uebers. schles. gesellsch. vaterl. cult., 1834: 93.

3415. Mnemosyne terrentula. (Fulgoridæ.)

Locality: Green River, Wyo. Horizon: Oligocene.

1878. Scudder. Bull. U. S. geol. surv. terr., iv: 773.
See also Oliarites terrentulus.

3416. Monanthia flexuosa. (Tingididæ.)

Compared with M. quadrimaculata Wolff, and M. wolffii Fieb., Europe.

Locality: Krottensee, Bohemia. Horizon: Aquitanian.

1877. Novák. Sitzungsb. akad. wiss. Wien, lxxvi: 79–80. *Pl.* 2, *figs.* 8–11.
1877. " Faun. egerer tertiärb., 9–10. *Pl.* 2, *figs.* 8–11.
1890. Scudder. Tert. ins. N. A., 358.

3417. Monanthia veterna. (Tingididæ.)

Locality: Florissant, Colo. Horizon: Oligocene.

1890. Scudder. Tert. ins. N. A., 359. *Pl.* 23, *figs.* 5, 9.

3418. Monanthia wollastoni. (Tingididæ.)

Compared with M. convergens Klug.

Locality: Oeningen, Baden. Horizon: Tortonian.

1865. Heer. Urwelt der Schweiz, 392 (in fig. as Tingis wollastoni).
1872. " Monde prim. Suisse, 480 (as above).
1876. " Prim. world Switz., ii: 50 (as above).
1879. " Urwelt der Schweiz, 2^e aufl., 417 (as above).
1890. Scudder. Tert. ins. N. A., 358.
See also Tingis wollastoni.

3419. Monophlebus ——. (Coccidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1845. Berendt. Bernst. befindl. organ. reste vorw., i: 55.
See also III, NEUROPTERA, Acreagris crenata.

3420. Monophlebus irregularis. (Coccidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1856. Germ.-Ber. Berendt, Bernst. befindl. organ. reste vorw., ii, th. i: 4. *Pl.* 1, *fig.* 3.
1856. Menge. Progr. petrischule Danzig, 1856: 18 (undescr.).

3421. Monophlebus pinnatus. (Coccidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1856. Germ.-Ber. Berendt, Bernst. befindl. organ. reste vorw., ii, th. i: 3. *Pl.* 1, *fig.* 1.
1856. Menge. Progr. petrischule Danzig, 1856: 18.

3422. Monophlebus simplex. (Coccidæ.)

Compared with M. pinnatus, Amber.

Locality: Florissant, Colo. Horizon: Oligocene.

1890. Scudder. Tert. ins. N. A., 242.

3423. Monophlebus trivenosus. (Coccidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1856. Germ.-Ber. Berendt, Bernst. befindl. organ. reste vorw., ii, th. i: 3–4. *Pl.* 1, *fig.* 2.

3424. Nabis ——. (Nabidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1845. Berendt. Bernst. befindl. organ. reste vorw., i: 55.

3425. Nabis gracillima. (Nabidæ.)

Locality: Oeningen, Baden. Horizon: Tortonian.

1865. Heer. Urwelt der Schweiz. *Fig.* 308, on *p.* 391.
1872. " Monde prim. Suisse. *Fig.* 308, on *p.* 479.
1876. " Prim. world Switz., ii. *Fig.* 308, on *p.* 49.
1879. " Urwelt der Schweiz, 2^e aufl. *Fig.* 350, on *p.* 417.

3426. **Nabis livida.** (Nabidæ.)

Locality: Radoboj, Croatia. Horizon: Mayencian.

1853. Heer. Insektenf. tertiärg. Oeningen, iii: 76. *Pl.* 5, *fig.* 18.
1855. " Ber. oesterreich. litt., 1850–'53: 201.
1856. Giebel. Insect. d. vorwelt, 365.

3427. **Nabis lucida.** (Nabidæ.)

Compared with N. vagans, Europe.

Locality: Prussian amber. Horizon: Ligurian.

1856. Germ.-Ber. Berendt, Bernst. befindl. organ. reste vorw., ii, th. i: 21. *Pl.* 2, *fig.* 10.

3428. **Nabis maculata.** (Nabidæ.)

Locality: Radoboj, Croatia. Horizon: Mayencian.

1853. Heer. Insektenf. tertiärg. Oeningen, iii: 76–78. *Pl.* 5, *fig.* 19; *pl.* 10, *fig.* 1.
1855. " Ber. oesterreich. litt., 1850–'53: 201.
1856. Giebel. Insect. d. vorwelt, 365.

3429. **Nabis prototypa.** (Nabidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1856. Menge. Progr. petrischule Danzig, 1856: 20 (undescr.).
See also Reduvius ——— Germ.-Ber.

3430. **Nabis vagabunda.** (Nabidæ.)

Locality: Radoboj, Croatia. Horizon: Mayencian.

1853. Heer. Insektenf. tertiärg. Oeningen, iii: 75–76. *Pl.* 5, *fig.* 17; *pl.* 10, *fig.* 2.
1855. " Ber. oesterreich. litt., 1850–'53: 201.
1856. Giebel. Insect. d. vorwelt, 364–365.

3431. **Naucoris dilatatus.** (Naucoridæ.)

Locality: (Oeningen?, Baden). Horizon: Tortonian.

1853. Heer. Insektenf. tertiärg. Oeningen, iii: 86. *Pl.* 10, *fig.* 11.
1856. Giebel. Insect. d. vorwelt, 372.
1885. Scudder. Zittel, Handb. palaeont., i, th. ii: 783. *Fig.* 995.
1886. " Zittel-Barrois, Traité de paléont., ii: 782. *Fig.* 1012.

3432. **Necrochromus cockerelli.** (Lygæidæ.)

Locality: Florissant, Colo. Horizon: Oligocene.

1890. Scudder. Tert. ins. N. A., 407. *Pl.* 27, *fig.* 10.

3433. **Necrochromus labatus.** (Lygæidæ.)

Locality: Florissant, Colo. Horizon: Oligocene.

1890. Scudder. Tert. ins. N. A., 407. *Pl.* 27, *fig.* 14.

3434. **Necrochromus saxificus.** (Lygæidæ.)

Locality: Florissant, Colo. Horizon: Oligocene.

1890. Scudder. Tert. ins. N. A., 407–408.

3435. Necrocydnus amyzonus. (Pentatomidæ.)
Locality: Florissant, Colo. Horizon: Oligocene.
1890. Scudder. Tert. ins. N. A., 446–447. *Pl.* 28, *fig.* 16.

3436. Necrocydnus gosiutensis. (Pentatomidæ.)
Locality: Green River, Wyo. Horizon: Oligocene.
1890. Scudder. Tert. ins. N. A., 445. *Pl.* 7, *fig.* 22.

3437. Necrocydnus revectus. (Pentatomidæ.)
Locality: Florissant, Colo. Horizon: Oligocene.
1890. Scudder. Tert. ins. N. A., 448.

3438. Necrocydnus senior. (Pentatomidæ.)
Locality: Florissant, Colo. Horizon: Oligocene.
1890. Scudder. Tert. ins. N. A., 447.

3439. Necrocydnus solidatus. (Pentatomidæ.)
Locality: Florissant, Colo. Horizon: Oligocene.
1890. Scudder. Tert. ins. N. A., 447. *Pl.* 28, *fig.* 13.

3440. Necrocydnus stygius. (Pentatomidæ.)
Locality: Florissant, Colo. Horizon: Oligocene.
1890. Scudder. Tert. ins. N. A., 446.

3441. Necrocydnus torpens. (Pentatomidæ.)
Locality: Florissant, Colo. Horizon: Oligocene.
1890. Scudder. Tert. ins. N. A., 445–446.

3442. Necrocydnus vulcanius. (Pentatomidæ.)
Locality: Florissant, Colo. Horizon: Oligocene.
1890. Scudder. Tert. ins. N. A., 444-445.

3443. Necropsylla rigida. (Psyllidæ.)
Locality: Florissant, Colo. Horizon: Oligocene.
1890. Scudder. Tert. ins. N. A., 276–277. *Pl.* 12, *figs.* 11, 21.
See also III, NEUROPTERA, Necropsocus ———.

3444. Necygonus rotundatus. (Galgulidæ.)
Locality: Green River, Wyo. Horizon: Oligocene.
1890. Scudder. Tert. ins. N. A., 348. *Pl.* 7, *fig.* 8.

3445. Nepa ———. (Nepidæ.)
Locality: Prussian amber. Horizon: Ligurian.
1830. Berendt. Insekten im bernstein, 36.

3446. Nepa ———. (Nepidæ.)
Locality: Oeningen, Baden. Horizon: Tortonian.
1834. Keferstein. Naturg. erdkörp., ii: 340.

3447. Nepa ——— (6 sp.). (Nepidæ.)

Locality: Oeningen, Baden. Horizon: Tortonian.

1888. Schöberlin. Soc. ent., iii: 61.

3448. Nepa ———. (Nepidæ.)

Compared with N. cinerea.

Locality: Aix, France. Horizon: Ligurian.

1829. Serres. Géogn. terrains tert., 228.

3449. Nepa atavina. (Nepidæ.)

Locality: Oeningen, Baden. Horizon: Tortonian.

1853. Heer. Insektenf. tertiärg. Oeningen, iii: 85. *Pl.* 10, *fig.* 9.
1856. Giebel. Insect. d. vorwelt, 370 (attavina).

Nepa attavina. See Nepa atavina.

3450. Neurocoris elongatus. (Pentatomidæ.)

Locality: Radoboj, Croatia. Horizon: Mayencian.

1853. Heer. Insektenf. tertiärg. Oeningen, iii: 25. *Pl.* 2, *fig.* 5; *pl.* 6, *fig.* 15.
1855. " Ber. oesterreich. litt., 1850–'53: 200.
1856. Giebel. Insect. d. vorwelt, 339.

3451. Neurocoris rotundatus. (Pentatomidæ.)

Locality: Radoboj, Croatia. Horizon: Mayencian.

1853. Heer. Insektenf. tertiärg. Oeningen, iii: 24–25. *Pl.* 2, *fig.* 4; *pl.* 6, *fig.* 14.
1853–'56. Bronn. Lethæa geogn., 3^{e} aufl., iii: 643. *Pl.* 42', *fig.* 19.
1855. Heer. Ber. oesterreich. litt., 1850–'53: 200.
1856. Geibel. Insect. d. vorwelt, 339.
1885. Scudder. Zittel, Handb. palaeont., i, th. ii: 786. *Fig.* 1004.
1886. " Zittel-Barrois, Traité de paléont., ii: 786. *Fig.* 1021.

3452. Notonecta ———. (Notonectidæ.)

Locality: Aix, France. Horizon: Ligurian.

1847. Hope. Trans. ent. soc. Lond., iv: 252.

3453. Notonecta ———. (Notonectidæ.)

Locality: Oeningen, Baden. Horizon: Tortonian.

1888. Schöberlin. Soc. ent., iii: 61.

3454. Notonecta ———. (Notonectidæ.)

Locality: Florissant, Colo. Horizon: Oligocene.

1885. Scudder. Zittel, Handb. palaeont., i, th. ii: 782.
1886. " Zittel-Barrois, Traité de paléont., ii: 782.
1886. " Bull. U. S. geol. surv., No. 31: 61.

See also the following.

3455. Notonecta emersoni. (Notonectidæ.)

Locality: Florissant. Colo. Horizon: Oligocene.

1890. Scudder. Tert. ins. N. A., 346–347. *Pl.* 22, *fig.* 11.

See also the preceding.

3456. Notonecta heydeni. (Notonectidæ.)

Compared with N. glauca.

Locality: Kutschlin, Bohemia. Horizon: Miocene.

1881. Deichmüller. Foss. ins. diatomeensch. Kutschlin, 36–38. *Pl.* 21, ***figs.*** **16–18**
1881. " Verhandl. leop.-carol. akad. naturf., xlii: 328–330. ***Pl.* 21, *figs.* 16–18.**

3457. Notonecta primæva. (Notonectidæ.)

Locality: Rott, Rhenish Prussia. Horizon: Aquitanian.

1859. Heyden. Palaeontogr., viii: 11. *Pl.* 2, *fig.* 12.

3458. Nyctophylax uhleri. (Fulgoridæ.)

Locality: Florissant, Colo. Horizon: Oligocene.

1890. Scudder. Tert. ins. N. A., 279–280. *Pl.* 19, *fig.* 11.

3459. Nyctophylax vigil. (Fulgoridæ.)

Locality: Florissant, Colo. Horizon: Oligocene.

1890. Scudder. Tert. ins. N. A., 280. *Pl.* 19, *fig.* 8.

3460. Nysius stratus. (Lygæidæ.)

Locality: Florissant, Colo. Horizon: Oligocene.

1890. Scudder. Tert. ins. N. A., 380. *Pl.* 23, *figs.* 14, 27; *pl.* 25, *figs.* 2, 8.

3461. Nysius terræ. (Lygæidæ.)

Locality: Florissant, Colo. Horizon: Oligocene.

1890. Scudder. Tert. ins. N. A., 379. *Pl.* 23, *fig.* 31.

3462. Nysius tritus. (Lygæidæ.)

Locality: Florissant, Colo. Horizon: Oligocene.

1890. Scudder. Tert. ins. N. A., 379. *Pl.* 23, *fig.* 20.

3463. Nysius vecula. (Lygæidæ.)

Locality: Florissant, Colo. Horizon: Oligocene.

1890. Scudder. Tert. ins. N. A., 378. *Pl.* 22, *fig.* 7.

3464. Nysius vinctus. (Lygæidæ.)

Locality: Florissant, Colo. Horizon: Oligocene.

1890. Scudder. Tert. ins. N. A., 378.

3465. Ochyrocoris electrina. (Coccidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1856. Menge. Progr. petrischule Danzig, 1856: 17–18.

3466. Oliarites terrentulus. (Fulgoridæ.)

Locality: Green River, Wyo. Horizon: Oligocene.

1890. Scudder. Tert. ins. N. A., 293 (terrentula). *Pl.* 7, *fig.* 17.
See also Mnemosyne terrentula.

3467. Oliarus? lutensis. (Fulgoridæ.)

Locality: Green River, Wyo. Horizon: Oligocene.

1890. Scudder. Tert. ins. N. A., 288. *Pl.* 7, *fig.* 18.

3468. Oncotylus ——. (Capsidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1890. Scudder. Tert. ins. N. A., 362.

3469. Orthops ——. (Capsidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1890. Scudder. Tert. ins. N. A., 362.

3470. Orthriocorisa longipes. (Coreidæ.)

Locality: Florissant, Colo. Horizon: Oligocene.

1890. Scudder. Tert. ins. N. A., 430. *Pl.* 26, *fig.* 1.

3471. Oryctaphis lesueurii. (Aphides.)

Locality: Florissant, Colo. Horizon: Oligocene.

1890. Scudder. Tert. ins. N. A., 267.

3472. Oryctaphis recondita. (Aphides.)

Locality: Florissant, Colo. Horizon: Oligocene.

1890. Scudder. Tert. ins. N. A., 266–267. *Pl.* 18, *fig.* 14.

3473. Pachycoris burmeisteri. (Pentatomidæ.)

Locality: Oeningen, Baden. Horizon: Tortonian.

1865. Heer. Urwelt der Schweiz. *Fig.* 298, on *p.* 391.
1872. " Monde prim. Suisse. *Fig.* 298, on *p.* 479.
1876. " Prim. world Switz., ii. *Fig.* 298, on *p.* 49.
1879. " Urwelt der Schweiz, 2^{e} aufl. *Fig.* 340, on *p.* 417.

3474. Pachycoris escheri. (Pentatomidæ.)

Locality: Oeningen, Baden. Horizon: Tortonian.

1853. Heer. Insektenf. tertiärg. Oeningen, iii: 10–11. *Pl.* 1, *fig.* 2; *pl.* 6, *fig.* 2.
1856. Giebel. Insect. d. vorwelt, 334.

3475. Pachycoris germari. (Pentatomidæ.)

Locality: Oeningen, Baden. Horizon: Tortonian.

1853. Heer. Insektenf. tertiärg. Oeningen, iii: 9–10. *Pl.* 1, *fig.* 1; *pl.* 6, *fig.* 1.
1856. Giebel. Insect. d. vorwelt, 334.

3476. Pachycoris protogæus. (Pentatomidæ.)

Locality: Oeningen, Baden. Horizon: Tortonian.

1853. Heer. Insektenf. tertiärg. Oeningen, iii: 126. *Pl.* 14, *fig.* 20.
1856. Giebel. Insect. d. vorwelt, 335 (protogneus).

Pachycoris protogneus. See Pachycoris protogæus.

3477. Pachymerus ——. (Lygæidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1845. Berendt. Bernst. befindl. organ. reste vorw., i: 55.

3478. Pachymerus ——— (4 sp.). (Lygæidæ.)

Locality: Brunstatt, Alsatia. **Horizon**: Middle Oligocene.

1890. Foerster. In litt.

3479. Pachymerus antiquus. (Lygæidæ.)

Locality: Sieblos, Rhenish Prussia. **Horizon**: Aquitanian.

1859. Heyden. Palaeontogr., viii: 16–17. *Pl.* 3, *fig.* 9.
1860. " Hassenc., Würzb. naturw. zeitschr., i: 79.

3480. Pachymerus bisignatus. (Lygæidæ.)

Locality: Radoboj, Croatia. **Horizon**: Mayencian.

1853. Heer. Insektenf. tertiärg. Oeningen, iii: 63–64. *Pl.* 5, *fig.* 2; *pl.* 9, *fig.* 9.
1855. " Ber. oesterreich. litt., 1850–'53: 201.
1856. Giebel. Insect. d. vorwelt, 356.

Pachymerus bojeri. See Pachymerus boyeri.

3481. Pachymerus boyeri. (Lygæidæ.)

Locality: Aix, France. **Horizon**: Ligurian.

1853. Heer. Insektenf. tertiärg. Oeningen, iii: 64–65 (bojeri). *Pl.* 5, *fig.* 1; *pl.* 9, *fig.* 10.
1856. " Viert. naturf. gesellsch. Zürich, i: 38 (bojeri).
1856. Giebel. Insect. d. vorwelt, 357 (bojeri).

See also Corizus boyeri.

3482. Pachymerus coloratus. (Lygæidæ.)

Locality: Prussian amber. **Horizon**: Ligurian.

1856. Germ.-Ber. Berendt, Bernst. befindl. organ. reste vorw., ii, th. i: 30. *Pl.* 3, *fig.* 15.

3483. Pachymerus cruciatus. (Lygæidæ.)

Compared with P. luscus H.-S., P. bactris.

Locality: Oeningen, Baden. **Horizon**: Tortonian.

1861. Heer. Rech. climat pays tert., 203 (undescr.).
1865. " Urwelt der Schweiz, 391.
1872. " Monde prim. Suisse, 480.
1876. " Prim. world Switz., ii: 50.
1879. " Urwelt der Schweiz, 2^{e} aufl., 416.

3484. Pachymerus dryadum. (Lygæidæ.)

Locality: Aix, France. **Horizon**: Ligurian.

1853. Heer. Insektenf. tertiärg. Oeningen, iii: 65. *Pl.* 5, *fig.* 4.
1856. " Viert. naturf. gesellsch. Zürich, i: 38.
1856. Giebel. Insect. d. vorwelt, 357.

3485. Pachymerus fasciatus. (Lygæidæ.)

Locality: Aix, France. **Horizon**: Ligurian.

1853. Heer. Insektenf. tertiärg. Oeningen, iii: 67. *Pl.* 5, *fig.* 7; *pl.* 9, *fig.* 12.
1856. " Viert. naturf. gesellsch. Zürich, i: 38.
1856. Giebel. Insect. d. vorwelt, 358.
1890. Scudder. Tert. ins. N. A., 397.

3486. Pachymerus heeri. (Lygæidæ.)

Locality: Aix, France. Horizon: Ligurian.

1856.	Giebel.	Insect. d. vorwelt, 357.

3487. Pachymerus morio. (Lygæidæ.)

Locality: Oeningen, Baden. Horizon: Tortonian.

1853.	Heer.	Insektenf. tertiärg. Oeningen, iii: 130. *Pl.* 14, *fig.* 16.
1856.	Giebel.	Insect. d. vorwelt, 358.

3488. Pachymerus murchisoni. (Lygæidæ.)

Locality: Aix, France. Horizon: Ligurian.

1853.	Heer.	Insektenf. tertiärg. Oeningen, iii: 62–63. *Pl.* 4, *fig.* 17; *pl.* 9, *fig.* 8.
1856.	Heer.	Viert. naturf. gesellsch. Zürich, i: 38.
1856.	Giebel.	Insect. d. vorwelt, 356.

3489. Pachymerus oblongus. (Lygæidæ.)

Locality: Oeningen, Baden. Horizon: Tortonian.

1853.	Heer.	Insektenf. tertiärg. Oeningen, iii: 67–68. *Pl.* 5, *fig.* 3; *pl.* 9, *fig.* 13.
1856.	Giebel.	Insect. d. vorwelt, 358.

3490. Pachymerus obsoletus. (Lygæidæ.)

Locality: Oeningen, Baden. Horizon: Tortonian.

1853.	Heer.	Insektenf. tertiärg. Oeningen, iii: 66. *Pl.* 5, *fig.* 5.
1856.	Giebel.	Insect. d. vorwelt, 357.

3491. Pachymerus petrensis. (Lygæidæ.)

Locality: White River, Utah. Horizon: Oligocene.

1877.	Scudder.	Bull. U. S. geol. surv. terr., iii: 761.
1890.	"	Tert. ins. N. A., 401. *Pl.* 5, *figs.* 70, 71.

3492. Pachymerus pulchellus. (Lygæidæ.)

Locality: Aix, France. Horizon: Ligurian.

1853.	Heer.	Insektenf. tertiärg. Oeningen, iii: 66–67. *Pl.* 5, *fig.* 6; *pl.* 9, *fig.* 11.
1856.	"	Viert. naturf. gesellsch. Zürich, i: 38.
1856.	Giebel.	Insect. d. vorwelt, 358.
1890.	Scudder.	Tert. ins. N. A., 397.

3493. Pachymerus senius. (Lygæidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1856.	Germ.-Ber.	Berendt, Bernst. befindl. organ. reste vorw., ii, th. i: 30. *pl.* 3, *fig.* 14.

3494. Palæocoris spectabilis. (Coreidæ.)

Locality: Radoboj, Croatia. Horizon: Mayencian.

1853.	Heer.	Insektenf. tertiärg. Oeningen, iii: 46–47. *Pl.* 4, *fig.* 1; *pl.* 8, *fig.* 11.
1853–'56.	Bronn.	Lethæa geogn., 3^{e} aufl., iii: 643. *Pl.* 42', *fig.* 21.
1855.	Heer.	Ber. oesterreich. litt., 1850–'53: 201.
1856.	Giebel.	Insect. d. vorwelt, 348.

3495. Palæothrips fossilis. (Physapodes.)

Locality: White River, Utah. **Horizon:** Oligocene.

1867.	Scudder.	Proc. Bost. soc. nat. hist., xi: 117.
1868.	“	Geol. mag., v: 221.
1873.	Oustalet.	Bull. soc. philom. Paris, x: 27.
1875.	Scudder.	Bull. U. S. geol. surv. terr., i: 222–223.
1875.	“	Tert. Phys. Colo., 2–3.
1877.	“	Bull. U. S. geol. surv. terr., iii: 761.
1885.	“	Zittel, Handb. palaeont., i, th. ii: 784. *Fig.* 999.
1886.	“	Zittel-Barrois, Traité de paléont., ii: 784. *Fig.* 1016.
1890.	Lesley.	Dict. foss. Penns., ii: 590. *Fig.*
1890.	Scudder.	Tert. ins. N. A., 373–374. *Pl.* 5, *figs.* 104, 105, 115.

3496. Palæovelia spinosa. (Veliidæ.)

Locality: Florissant, Colo. **Horizon:** Oligocene.

1890.	Scudder.	Tert. ins. N. A., 349. *Pl.* 22, *fig.* 13.

3497. Palaphrodes cincta. (Cercopidæ.)

Locality: Florissant, Colo. **Horizon:** Oligocene.

1890.	Scudder.	Tert. ins. N. A., 334–335. *Pl.* 20, *fig.* 16; *pl.* 21, *fig.* 15.

3498. Palaphrodes irregularis. (Cercopidæ.)

Locality: Florissant, Colo. **Horizon:** Oligocene.

1890.	Scudder.	Tert. ins. N. A., 335–336. *Pl.* 20, *figs.* 2, 18; *pl.* 21, *figs.* 6, 7.

3499. Palaphrodes obliqua. (Cercopidæ.)

Locality: Florissant, Colo. **Horizon:** Oligocene.

1870.	Scudder.	Tert. ins. N. A., 336. *Pl.* 21, *fig.* 10.

3500. Palaphrodes obscura. (Cercopidæ.)

Locality: Florissant, Colo. **Horizon:** Oligocene.

1890.	Scudder.	Tert. ins. N. A., 335. *Pl.* 21, *fig.* 18.

3501. Palaphrodes transversa. (Cercopidæ.)

Locality: Florissant, Colo. **Horizon:** Oligocene.

1890.	Scudder.	Tert. ins. N. A., 336–337.

3502. Paleophora communis. (Cercopidæ.)

Locality: Florissant, Colo. **Horizon:** Oligocene.

1890.	Scudder.	Tert. ins. N. A., 328. *Pl.* 20, *figs.* 3, 20, 21.

3503. Paleophora inornata. (Cercopidæ.)

Locality: Florissant, Colo. **Horizon:** Oligocene.

1890.	Scudder.	Tert. ins. N. A., 329. *Pl.* 20, *fig.* 15.

3504. Paleophora maculata. (Cercopidæ.)

Locality: Florissant, Colo. **Horizon:** Oligocene.

1890.	Scudder.	Tert. ins. N. A., 326–327. *Pl.* 20, *figs.* 10, 17.

3505. Paleophora marvinei. (Cercopidæ.)

Locality: Florissant, Colo. **Horizon:** Oligocene.

1890.	Scudder.	Tert. ins. N. A., 327–328. *Pl.* 20, *figs.* 11–13; *pl.* 21, *figs.* 9, 12.

3506. Palecphora patefacta. (Cercopidæ.)

Locality: Green River, Wyo. Horizon: Oligocene.

1890.	Scudder.	Tert. ins. N. A., 327. *Pl.* 7, *fig.* 7.

3507. Palecphora prævalens. (Cercopidæ.)

Locality: Florissant, Colo. Horizon: Oligocene.

1890.	Scudder.	Tert. ins. N. A., 329. *Pl.* 20, *fig.* 1; *pl.* 21, *fig.* 2.

3508. Parodarmistus abscissus. (Coreidæ.)

Locality: Florissant, Colo. Horizon: Oligocene.

1890.	Scudder.	Tert. ins. N. A., 422.

3509. Parodarmistus caducus. (Coreidæ.)

Locality: Florissant, Colo. Horizon: Oligocene.

1890.	Scudder.	Tert. ins. N. A., 422.

3510. Parodarmistus collisus. (Coreidæ.)

Locality: Florissant, Colo. Horizon: Oligocene.

1890.	Scudder.	Tert. ins. N. A., 422–423. *Pl.* 25, *fig.* 13.

3511. Parodarmistus defectus. (Coreidæ.)

Locality: Florissant, Colo. Horizon: Oligocene.

1890.	Scudder.	Tert. ins. N. A., 423.

3512. Parodarmistus exanimatus. (Coreidæ.)

Locality: Florissant, Colo. Horizon: Oligocene.

1890.	Scudder.	Tert. ins. N. A., 423–424.

3513. Parodarmistus inhibitus. (Coreidæ.)

Locality: Florissant, Colo. Horizon: Oligocene.

1890.	Scudder.	Tert. ins. N. A., 424.

3514. Pediopsis ———. (Jassides.)

Locality: Brunstatt, Alsatia. Horizon: Middle Oligocene.

1890.	Foerster.	In litt.

3515. Pemphigus bursifex. (Aphides.)

Compared with P. bursarius L., Europe.

Locality: (Oeningen ?, Baden.) Horizon: Tortonian.

1853.	Heer.	Insektenf. tertiärg. Oeningen, iii: 125. *Pl.* 15, *fig.* 6.
1856.	Giebel.	Insect. d. vorwelt, 390.
1865.	Heer.	Urwelt der Schweiz, 389.
1872.	“	Monde prim. Suisse, 477.
1876.	“	Prim. world Switz., ii: 47.
1879.	“	Urwelt der Schweiz, 2ᵉ aufl., 414.
1883.	Buckton.	Monogr. Brit. aphid., iv: 172–173. *Pl.* 132, *figs.* 12*a*, 12*b*.

3516. Pentatoma ? ———. (Pentatomidæ.)

Locality: Aix, France. Horizon: Ligurian.

1829.	Curtis.	Edinb. new phil. journ., vii: 296.
1829.	“	Murchison-Lyell, Tert. form. Aix, 12.

3517. Pentatoma —— (4 sp.). (Pentatomidæ.)

Locality: Brunstatt, Alsatia. **Horizon**: Middle Oligocene.

1890. Foerster. In litt.

3518. Pentatoma ——. (Pentatomidæ.)

Locality: Prussian amber. **Horizon**: Ligurian.

1829. Serres. Géogn. terrains tert., 241.

3519. Pentatoma ——. (Pentatomidæ.)

Compared with P. grisea.

Locality: Aix, France. **Horizon**: Ligurian.

1829. Serres. Géogn. terrains tert., 227, 271 (on p. 271 called P. grisea). *Pl.* 4, *figs.* 5, 6.

3520. Pentatoma ——. (Pentatomidæ.)

Compared with P. oleracea.

Locality: Aix, France. **Horizon**: Ligurian.

1829. Serres. Géogn. terrains tert., 227.

3521. Pentatoma antiquum. (Pentatomidæ.)

Locality: Oeningen, Baden. **Horizon**: Tortonian.

1853. Heer. Insektenf. tertiärg. Oeningen, iii: 26–27. *Pl.* 2, *fig.* 7; *pl.* 7, *fig.* 1.

1856. Giebel. Insect. d. vorwelt, 340–341.

3522. Pentatoma appendiculatum. (Pentatomidæ.)

Locality: Oeningen, Baden. **Horizon**: Tortonian.

1853. Heer. Insektenf. tertiärg. Oeningen, iii: 29. *Pl.* 2, *fig.* 11; *pl.* 7, *fig.* 4.

1856. Giebel. Insect. d. vorwelt, 341.

3523. Pentatoma böttgeri. (Pentatomidæ.)

Compared with P. rufipes.

Locality: Salzhausen, Germany. **Horizon**: Miocene.

1865. Heyd.-Heyd. Palaeontogr., xiv: 34. *Pl.* 9, *fig.* 22.

3524. Pentatoma boreale. (Pentatomidæ.)

Locality: Atanekerdluk, North Greenland. **Horizon**: Miocene.

1868. Heer. Flora foss. arct., i: 130. *Pl.* 19, *figs.* 15, 15*bc*.

1883. " Flora foss. Grönl., ii: 148.

3525. Pentatoma bruckmanni. (Pentatomidæ.)

Locality: Oeningen, Baden. **Horizon**: Tortonian.

1851. Stizenberger. Uebers. verstein. Baden, 95 (as of Heer; name only. By mistake for some other name, perhaps Halys bruckmanni).

Pentatoma grisea. See Pentatoma —— Serres.

3526. Pentatoma lividum. (Pentatomidæ.)

Locality: Radoboj, Croatia. **Horizon**: Mayencian.

1851. Heer. Insektenf. tertiärg. Oeningen, iii: 30–31. *Pl.* 2, *fig.* 13; *pl.* 7, *fig.* 6.

1855. " Ber. oesterreich. litt., 1850–'53: 200.

1856. Giebel. Insect. d. vorwelt, 342.

3527. **Pentatoma longiceps.** (Pentatomidæ.)

Locality: Oeningen, Baden. Horizon: Tortonian.

1853. Heer. Insektenf. tertiärg. Oeningen, iii: 29-30. *Pl.* 2, *fig.* 12; *pl.* 7, *fig.* 5.
1856. Giebel. Insect. d. vorwelt, 342.

3528. **Pentatoma morloti.** (Pentatomidæ.)

Locality: Radoboj, Croatia. Horizon: Mayencian.

1853. Heer. Insektenf. tertiärg. Oeningen, iii: 28-29. *Pl.* 2, *fig.* 10; *pl.* 7, *fig.* 3.
1855. " Ber. oesterreich. litt., 1850-'53: 200.
1856. Giebel. Insect. d. vorwelt, 341.

3529. **Pentatoma obsoletum.** (Pentatomidæ.)

Locality: Oeningen, Baden. Horizon: Tortonian.

1853. Heer. Mitth. naturf. gesellsch. Zürich, iii: 191.
1853. " Rhynchoten tertiärz., 23.

See also Ælia obsoleta.

3530. **Pentatoma pictum.** (Pentatomidæ.)

Locality: Oeningen, Baden. Horizon: Tortonian.

1865. Heer. Urwelt der Schweiz. *Fig.* 309 on *p.* 391.
1872. " Monde prim. Suisse. *Fig.* 309 on *p.* 479.
1876. " Prim. world Switz., ii. *Fig.* 309 on *p.* 49.
1879. " Urwelt der Schweiz, 2ᵉ aufl. *Fig.* 351 on *p.* 417.

3531. **Pentatoma schaurothi.** (Pentatomidæ.)

Compared with P. dissimile, Europe.

Locality: Prussian amber. Horizon: Ligurian.

1862. Giebel. Zeitschr. gesellsch. naturw., xx: 313-314.

3532. **Pentatoma stigmatum.** (Pentatomidæ.)

Locality: Oeningen, Baden. Horizon: Tortonian.

1853. Heer. Insektenf. tertiärg. Oeningen, iii: 31-32. *Pl.* 2, *fig.* 14.
1856. Giebel. Insect. d. vorwelt, 342.

3533. **Pentatoma vetustum.** (Pentatomidæ.)

Locality: Oeningen, Baden. Horizon: Tortonian.

1853. Heer. Insektenf. tertiärg. Oeningen, iii: 27-28. *Pl.* 2, *fig.* 8; *pl.* 7, *fig.* 2.
1856. Giebel. Insect. d. vorwelt, 341.

3534. **Pentatomites foliarum.** (Pentatomidæ.)

Locality: Florissant, Colo. Horizon: Oligocene.

1890. Scudder. Tert. ins. N. A., 462. *Pl.* 28, *fig.* 1.

3535. **Petrolystra gigantea.** (Cercopidæ.)

Locality: Florissant, Colo. Horizon: Oligocene.

1878. Scudder. Bull. U. S. geol. surv. terr., iv: 531-532.
1885. " Zittel, Handb. palaeont., i, th. ii: 781. *Fig.* 992.
1886. " Zittel Barrois, Traité de paléont., ii: 781. *Fig.* 1009.
1890. " Tert. ins. N. A., 321-322. *Pl.* 20, *figs.* 5-7.

3536. Petrolystra heros. (Cercopidæ.)

Locality: Florissant, Colo. Horizon: Oligocene.

1878. Scudder. Bull. U. S. geol. surv. terr., iv: 532.
1890. " Tert. ins. N. A., 322–323. *Pl.* 20, *fig.* 8.

3537. Phlœocoris monstrosus. (Pentatomidæ.)

Locality: Radoboj, Croatia. Horizon: Mayencian.

1853. Heer. Insektenf. tertiärg. Oeningen, iii: 25–26. *Pl.* 2, *fig.* 6.
1855. " Ber. oesterreich. litt., 1850–'53: 200.
1856. Giebel. Insect. d. vorwelt, 340.

3538. Phlœothrips pohligi. (Physapodes.)

Locality: Rott, Rhenish Prussia. Horizon: Aquitanian.

1887. Schlechtend. Zeitschr. gesellsch. naturw., lx: 560–563. *Pl.* 3, *fig.* 1.

3539. Phrudopamera chittendeni. (Lygæidæ.)

Locality: Florissant, Colo. Horizon: Oligocene.

1890. Scudder. Tert. ins. N. A., 389. *Pl.* 26, *figs.* 7, 9.

3540. Phrudopamera wilsoni. (Lygæidæ.)

Locality: Florissant, Colo. Horizon: Oligocene.

1890. Scudder. Tert. ins. N. A., 388–389. *Pl.* 27, *figs.* 9, 16.

3541. Phthinocoris colligatus. (Coreidæ.)

Locality: Florissant, Colo. Horizon: Oligocene.

1890. Scudder. Tert. ins. N. A., 414–415. *Pl.* 22, *fig.* 3.

3542. Phthinocoris languidus. (Coreidæ.)

Locality: Florissant, Colo. Horizon: Oligocene.

1890. Scudder. Tert. ins. N. A., 415–416. *Pl.* 27, *fig.* 6.

3543. Phthinocoris lethargicus. (Coreidæ.)

Locality: Florissant, Colo. Horizon: Oligocene.

1890. Scudder. Tert. ins. N. A., 415. *Pl.* 26, *fig.* 17; *pl.* 27, *fig.* 17.

3544. Phthinocoris petræus. (Coreidæ.)

Locality: Florissant, Colo. Horizon: Oligocene.

1890. Scudder. Tert. ins. N. A., 416.

3545. Phytocoris ———. (Capsidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1845. Berendt. Bernst. befindl. organ. reste vorw., i: 55.

3546. Phytocoris ———. (Capsidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1890. Scudder. Tert. ins. N. A., 362.

3547. Phytocoris ——— (larva). (Capsidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1856. Germ.-Ber. Berendt, Bernst. befindl. organ. reste vorw., ii, th. i: 29–30. *Pl.* 2, *fig.* 14.
1856. Giebel. Insect. d. vorwelt, 362.

3548. Phytocoris angustulus. (Capsidæ.)

Compared with P. betuleti.

Locality: Prussian amber. Horizon: Ligurian.

1856. Germ.-Ber. Berendt, Bernst. befindl. organ. reste vorw., ii, th. i: 29. *Pl.* 3, *fig.* 11.

3549. Phytocoris balticus. (Capsidæ.)

Compared with P. angulatus.

Locality: Prussian amber. Horizon: Ligurian.

1856. Germ.-Ber. Berendt, Bernst. befindl. organ. reste vorw., ii, th. i: 26–27. *Pl.* 3, *fig.* 4.

3550. Phytocoris consobrinus. (Capsidæ.)

Compared with P. sexguttatus, Europe.

Locality: Prussian amber. Horizon: Ligurian.

1856. Germ. Ber. Berendt, Bernst. befindl. organ. reste vorw., ii, th. i: 25–26. *Pl.* 3, *fig.* 2.

3551. Phytocoris electrinus. (Capsidæ.)

Compared with P. thoracicus.

Locality: Prussian amber. Horizon: Ligurian.

1856. Germ.-Ber. Berendt, Bernst. befindl. organ. reste vorw., ii, th. i: 28. *Pl.* 3, *fig.* 8.

3552. Phytocoris ? euglotta. (Capsidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1856. Germ.-Ber. Berendt, Bernst. befindl. organ. reste vorw., ii, th. i: 24–25. *Pl.* 2, *fig.* 16.

3553. Phytocoris gulosus. (Capsidæ.)

Compared with P. albostriatus.

Locality: Prussian amber. Horizon: Ligurian.

1856. Germ.-Ber. Berendt, Bernst. befindl. organ. reste vorw., ii, th. i: 27–28. *Pl.* 3, *fig.* 7.

3554. Phytocoris gummosus. (Capsidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1856. Germ.-Ber. Berendt, Bernst. befindl. organ. reste vorw., ii, th. i: 25. *Pl.* 3, *fig.* 1.

3555. Phytocoris involutus. (Capsidæ.)

Compared with P. flavovarius.

Locality: Prussian amber. Horizon: Ligurian.

1856. Germ.-Ber. Berendt, Bernst. befindl. organ. reste vorw., ii, th. i: 28–29. *Pl.* 3, *fig.* 9.

1890. Scudder. Tert. ins. N. A., 363.

3556. Phytocoris merus. (Capsidæ.)

Compared with Capsus capillaris.

Locality: Prussian amber. Horizon: Ligurian.

1856. Germ.-Ber. Berendt, Bernst. befindl. organ. reste vorw., ii, th. i: 27. *Pl.* 3, *fig.* 6.

3557. Phytocoris punctiger. (Capsidæ.)

Compared with P. thunbergi.

Locality: Prussian amber. Horizon: Ligurian.

1856. Germ.-Ber. Berendt, Bernst. befindl. organ. reste vorw., ii, th. i: 27. *Pl.* 3, *fig.* 5.

3558. Phytocoris raptorius. (Capsidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1856. Germ.-Ber. Berendt, Bernst. befindl. organ. reste vorw., ii, th. i: 26. *Pl.* 3, *fig.* 3.

3559. Phytocoris sendelii. (Capsidæ.)

Compared with P. thunbergi.

Locality: Prussian amber. Horizon: Ligurian.

1856. Germ.-Ber. Berendt, Bernst. befindl. organ. reste vorw., ii, th. i: 24. *Pl.* 2, *fig.* 15.

3560. Phytocoris vetustus. (Capsidæ.)

Compared with P. ferrugatus.

Locality: Prussian amber. Horizon: Ligurian.

1856. Germ.-Ber. Berendt, Bernst. befindl. organ. reste vorw., ii, th. i: 29. *Pl.* 3, *fig.* 10.

3561. Piesma rotunda. (Tingitidæ.)

Locality: Florissant, Colo. Horizon: Oligocene.

1890. Scudder. Tert. ins. N. A., 358. *Pl.* 23, *fig.* 6.

3562. Piezocoris compactilis. (Coreidæ.)

Locality: Florissant, Colo. Horizon: Oligocene.

1890. Scudder. Tert. ins. N. A., 417.

3563. Piezocoris ? peremptus. (Coreidæ.)

Locality: Florissant, Colo. Horizon: Oligocene.

1890. Scudder. Tert. ins. N. A., 417–418. *Pl.* 26, *fig.* 14.

3564. Piezocoris peritus. (Coreidæ.)

Locality: Florissant, Colo. Horizon: Oligocene.

1890. Scudder. Tert. ins. N. A., 417. *Pl.* 25, *fig.* 15.

3565. Pirates œningensis. (Reduviidæ.)

Locality: Oeningen, Baden. Horizon: Tortonian.

1853. Heer. Insektenf. tertiärg. Oeningen, iii: 132–134. *Pl.* 15, *fig.* 11.
1856. Giebel. Insect. d. vorwelt, 368.

3566. Planophlebia gigantea. (Fulgoridæ.)

Locality: Similkameen River, British Columbia. Horizon: ———.

1879. Scudder. Rep. progr. geol. surv. Can., 1877–'78: B 186.
1879. " Ins. tert. Nicola, 11.
1890. " Tert. ins. N. A., 296–297. *Pl.* 2, *fig.* 16.

3567. Platymeris ——. (Reduviidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1845. Berendt. Bernst. befindl. organ. reste vorw., i: 55.

3568. Platymeris insignis. (Reduviidæ.)

Compared with P. formicaria, Brazil.

Locality: Prussian amber. Horizon: Ligurian.

1856. Germ.-Ber. Berendt, Bernst. befindl. organ. reste vorw., ii, th. i: 21. *Pl.* 3, *fig.* 12.

3569. Ploiaria ——. (Reduviidæ.)

Locality: Aix, France. Horizon: Ligurian.

1829. Serres. Géogn. terrains tert., 228.
See also Hydrometra —— Burmeister.

3570. Pœcilocapsus fremontii. (Capsidæ.)

Compared with P. ornatulus (Stål), Mexico.

Locality: Florissant, Colo. Horizon: Oligocene.

1890. Scudder. Tert. ins. N. A., 365–366. *Pl.* 24, *fig.* 3.

3571. Pœcilocapsus ostentus. (Capsidæ.)

Locality: Florissant, Colo. Horizon: Oligocene.

1890. Scudder. Tert. ins. N. A., 368. *Pl.* 24, *fig.* 2.

3572. Pœcilocapsus tabidus. (Capsidæ.)

Locality: Florissant, Colo. Horizon: Oligocene.

1890. Scudder. Tert. ins. N. A., 367–368. *Pl.* 24, *fig.* 8.

3573. Pœcilocapsus veterandus. (Capsidæ.)

Locality: Florissant, Colo. Horizon: Oligocene.

1890. Scudder. Tert. ins. N. A., 366. *Pl.* 24, *fig.* 9.

3574. Pœcilocapsus veternosus. (Capsidæ.)

Locality: Florissant, Colo. Horizon: Oligocene.

1890. Scudder. Tert. ins. N. A., 367.

3575. Pœocera ——. (Fulgoridæ.)

Locality: Prussian amber. Horizon: Ligurian.

1845. Berendt. Bernst. befindl. organ. reste vorw., i: 55.

3576. Pœocera nassata. (Fulgoridæ.)

Locality: Prussian amber. Horizon: Ligurian.

1856. Germ.-Ber. Berendt, Bernst. befindl. organ. reste vorw., ii, th. i: 17–18. *Pl.* 2, *fig.* 5.

3577. Pœocera pristina. (Fulgoridæ.)

Locality: Prussian amber. Horizon: Ligurian.

1856. Germ.-Ber. Berendt, Bernst. befindl. organ. reste vorw., ii, th. i: 18. *Pl.* 2, *fig.* 6.

3557. Phytocoris punctiger. (Capsidæ.)

Compared with P. thunbergi.

Locality: Prussian amber. Horizon: Ligurian.

1856. Germ.-Ber. Berendt, Bernst. befindl. organ. reste vorw., ii, th. i: 27. *Pl.* 3, *fig.* 5.

3558. Phytocoris raptorius. (Capsidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1856. Germ.-Ber. Berendt, Bernst. befindl. organ. reste vorw., ii, th. i: 26. *Pl.* 3, *fig.* 3.

3559. Phytocoris sendelii. (Capsidæ.)

Compared with P. thunbergi.

Locality: Prussian amber. Horizon: Ligurian.

1856. Germ.-Ber. Berendt, Bernst. befindl. organ. reste vorw., ii, th. i: 24. *Pl.* 2, *fig.* 15.

3560 Phytocoris vetustus. (Capsidæ.)

Compared with P. ferrugatus.

Locality: Prussian amber. Horizon: Ligurian.

1856. Germ.-Ber. Berendt, Bernst. befindl. organ. reste vorw., ii, th. i: 29. *Pl.* 3, *fig.* 10.

3561. Piesma rotunda. (Tingididæ.)

Locality: Florissant, Colo. Horizon: Oligocene.

1890. Scudder. Tert. ins. N. A., 358. *Pl.* 23, *fig.* 6.

3562. Piezocoris compactilis. (Coreidæ.)

Locality: Florissant, Colo. Horizon: Oligocene.

1890. Scudder. Tert. ins. N. A., 417.

3563. Piezocoris? peremptus. (Coreidæ.)

Locality: Florissant, Colo. Horizon: Oligocene.

1890. Scudder. Tert. ins. N. A., 417–418. *Pl.* 26, *fig.* 14.

3564. Piezocoris peritus. (Coreidæ.)

Locality: Florissant, Colo. Horizon: Oligocene.

1890. Scudder. Tert. ins. N. A., 417. *Pl.* 25, *fig.* 15.

3565. Pirates œningensis. (Reduviidæ.)

Locality: Oeningen, Baden. Horizon: Tortonian.

1853. Heer. Insektenf. tertiärg. Oeningen, iii: 132–134. *Pl.* 15, *fig.* 11.
1856. Giebel. Insect. d. vorwelt, 368.

3566. Planophlebia gigantea. (Fulgoridæ.)

Locality: Similkameen River, British Columbia. Horizon: ———.

1879. Scudder. Rep. progr. geol. surv. Can., 1877–'78: B 186.
1879. " Ins. tert. Nicola, 11.
1890. " Tert. ins. N. A., 296–297. *Pl.* 2, *fig.* 16.

3567. Platymeris ———. (Reduviidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1845. Berendt. Bernst. befindl. organ. reste vorw., i: 55.

3568. Platymeris insignis. (Reduviidæ.)

Compared with P. formicaria, Brazil.

Locality: Prussian amber. Horizon: Ligurian.

1856. Germ.-Ber. Berendt, Bernst. befindl. organ. reste vorw., ii, th. i: 21. *Pl.* 3, *fig.* 12.

3569. Ploiaria ———. (Reduviidæ.)

Locality: Aix, France. Horizon: Ligurian.

1829. Serres. Géogn. terrains tert., 228.
See also Hydrometra ——— Burmeister.

3570. Pœcilocapsus fremontii. (Capsidæ.)

Compared with P. ornatulus (Stål), Mexico.

Locality: Florissant, Colo. Horizon: Oligocene.

1890. Scudder. Tert. ins. N. A., 365–366. *Pl.* 24, *fig.* 3.

3571. Pœcilocapsus ostentus. (Capsidæ.)

Locality: Florissant, Colo. Horizon: Oligocene.

1890. Scudder. Tert. ins. N. A., 368. *Pl.* 24, *fig.* 2.

3572. Pœcilocapsus tabidus. (Capsidæ.)

Locality: Florissant, Colo. Horizon: Oligocene.

1890. Scudder. Tert. ins. N. A., 367–368. *Pl.* 24, *fig.* 8.

3573. Pœcilocapsus veterandus. (Capsidæ.)

Locality: Florissant, Colo. Horizon: Oligocene.

1890. Scudder. Tert. ins. N. A., 366. *Pl.* 24, *fig.* 9.

3574. Pœcilocapsus veternosus. (Capsidæ.)

Locality: Florissant, Colo. Horizon: Oligocene.

1890. Scudder. Tert. ins. N. A., 367.

3575. Pœocera ———. (Fulgoridæ.)

Locality: Prussian amber. Horizon: Ligurian.

1845. Berendt. Bernst. befindl. organ. reste vorw., i: 55.

3576. Pœocera nassata. (Fulgoridæ.)

Locality: Prussian amber. Horizon: Ligurian.

1856. Germ.-Ber. Berendt, Bernst. befindl. organ. reste vorw., ii, th. i: 17–18. *Pl.* 2, *fig.* 5.

3577. Pœocera pristina. (Fulgoridæ.)

Locality: Prussian amber. Horizon: Ligurian.

1856. Germ.-Ber. Berendt, Bernst. befindl. organ. reste vorw., ii, th. i: 18. *Pl.* 2, *fig.* 6.

3578. Pœocera venulosa. (Fulgoridæ.)
Locality: Prussian amber. Horizon: Ligurian.
1862. Giebel. Zeitschr. gesellsch. naturw., xx: 312–313.

3579. Polioschistus lapidarius. (Pentatomidæ.)
Locality: Florissant, Colo. Horizon: Oligocene.
1890. Scudder. Tert. ins. N. A., 461. *Pl.* 28, *fig.* 10.

3580. Polioschistus ligatus. (Pentatomidæ.)
Locality: Florissant, Colo. Horizon: Oligocene.
1890. Scudder. Tert. ins. N. A., 461. *Pl.* 28, *fig.* 5.

3581. Polyclona ——. (Coccidæ.)
Locality: Prussian amber. Horizon: Ligurian.
1856. **Menge.** Progr. petrischule Danzig, 1856: 18.

3582. Poteschistus obnubilus. (Pentatomidæ.)
Locality: Florissant, Colo. Horizon: Oligocene.
1890. Scudder. Tert. ins. N. A., 458. *Pl.* 28, *fig.* 18.

3583. Prinecphora balteata. (Cercopidæ.)
Locality: Florissant, Colo. Horizon: Oligocene.
1890. Scudder. Tert. ins. N. A., 332. *Pl.* 20, *fig.* 14.

3584. Procoris bechleri. (Lygæidæ.)
Locality: Florissant, Colo. Horizon: Oligocene.
1890. Scudder. Tert. ins. N. A., 393–394. *Pl.* 27, *fig.* 4.

3585. Procoris sanctæjohannis. (Lygæidæ.)
Locality: Florissant, Colo. Horizon: Oligocene.
1890. Scudder. Tert. ins. N. A., 393.

3586. Procrophius communis. (Lygæidæ.)
Locality: Florissant, Colo. Horizon: Oligocene.
1890. Scudder. Tert. ins. N. A., 382. *Pl.* 23, *figs.* 12, 18, 28, 29; *pl.* 24, *fig.* 1.

3587. Procrophius costalis. (Lygæidæ.)
Locality: Florissant, Colo. Horizon: Oligocene.
1890. Scudder. Tert. ins. N. A., 382–383. *Pl.* 23, *fig.* 8.

3588. Procrophius languens. (Lygæidæ.)
Locality: Florissant, Colo. Horizon: Oligocene.
1890. Scudder. Tert. ins. N. A , 383. *Pl.* 23, *fig.* 23.

3589. Procydnus devictus. (Pentatomidæ.)
Locality: Florissant, Colo. Horizon: Oligocene.
1890. Scudder. Tert. ins. N. A., 440. *Pl.* 28, *fig.* 4.

3590. Procydnus divexus. (Pentatomidæ.)
Locality: Florissant, Colo. Horizon: Oligocene.
1890. Scudder. Tert. ins. N. A., 440.

3591. Procydnus eatoni. (Pentatomidæ.)

Locality: Florissant, Colo. Horizon: Oligocene.

1890. Scudder. Tert. ins. N. A., 442.

3592. Procydnus mamillanus. (Pentatomidæ.)

Locality: Green River, Wyo. Horizon: Oligocene.

1890. Scudder. Tert. ins. N. A., 443. *Pl.* 7, *fig.* 19.
See also Cydnus mamillanus.

3593. Procydnus pronus. (Pentatomidæ.)

Locality: Florissant, Colo. Horizon: Oligocene.

1890. Scudder. Tert. ins. N. A., 439. *Pl.* 28, *fig.* 5.

3594. Procydnus quietus. (Pentatomidæ.)

Locality: Florissant, Colo. Horizon: Oligocene.

1890. Scudder. Tert. ins. N. A., 441.

3595. Procydnus reliquus. (Pentatomidæ.)

Locality: Florissant, Colo. Horizon: Oligocene.

1890. Scudder. Tert. ins. N. A., 441.

3596. Procydnus vesperus. (Pentatomidæ.)

Locality: Florissant, Colo. Horizon: Oligocene.

1890. Scudder. Tert. ins. N. A., 442. *Pl.* 28, *fig.* 15.

3597. Prolygæus inundatus. (Lygæidæ.)

Locality: Florissant, Colo. Horizon: Oligocene.

1890. Scudder. Tert. ins. N. A., 406. *Pl.* 27, *fig.* 13.

3598. Prosigara flabellum. (Corixidæ.)

Locality: Florissant, Colo. Horizon: Oligocene.

1890. Scudder. Tert. ins. N. A., 344. *Pl.* 22, *fig.* 12.

3599. Prostemma œningensis. (Nabidæ.)

Locality: Oeningen, Baden. Horizon: Tortonian.

1853. Heer. Insektenf. tertiärg. Oeningen, iii: 82-83. *Pl* 5, *fig.* 26; *pl.* 10, *fig.* 7.
1856. Giebel. Insect. d. vorwelt, 367.

3600. Protenor imbecillis. (Coreidæ.)

Locality: Florissant, Colo. Horizon: Oligocene.

1890. Scudder. Tert. ins. N. A., 424-425. *Pl.* 26, *fig.* 8.

3601. Pseudophana ———. (Fulgoridæ.)

Locality: Prussian amber. Horizon: Ligurian.

1845. Berendt. Bernst. befindl. organ. reste vorw., i: 55.

3602. Pseudophana amatoria. (Fulgoridæ.)

Compared with P. europæa F., Europe.

Locality: Oeningen, Baden. Horizon: Tortonian.

1853. Heer. Insektenf. tertiärg. Oeningen, iii: 90–91 (Pseudophania). *Pl.* 13, *fig.* 10.
1856. " Viert. naturf. gesellsch. Zürich, i: 39.
1856. Giebel. Insect. d. vorwelt, 376.
1865. Heer. Urwelt der Schweiz, 359, 393.
1872. " Monde prim. Suisse, 441, 482.
1876. " Prim. world Switz., ii: 14, 52.
1879. " Urwelt der Schweiz, 2^e aufl., 385, 419.

3603. Pseudophana recticulata. (Fulgoridæ.)

Locality: Prussian amber. Horizon: Ligurian.

1856. Germ.-Ber. Berendt, Bernst. befindl. organ. reste vorw., ii, th. i: 16–17. *Pl.* 2, *fig.* 4.

Pseudophania amatoria. See Pseudophana amatoria.

3604. Pterostigma nigrum. (Aphides.)

Locality: Florissant, Colo. Horizon: Oligocene.

1890. Scudder. Tert. ins. N. A., 275.

3605. Pterostigma recurvum. (Aphides.)

Locality: Florissant, Colo. Horizon: Oligocene.

1883. Buckton. Monogr. Brit. aphid., iv: 178. *Pl.* 133, *fig.* 6.
1890. Scudder. Tert. ins. N. A., 274. *Pl.* 18, *fig.* 18.

Ptyela carbonaria. See Aphrophora (Ptyelus) carbonaria.

3606. Ptyelus (vic.) —— (several). (Cercopidæ.)

Locality: Florissant, Colo. Horizon: Oligocene.

1881. Scudder. Bull. U. S. geol. surv. terr., vi: 292.
1883. " Ann. rep. U. S. geol. surv. terr., xii: 282.

Ptyelus carbonarius. See Aphrophora (Ptyelus) carbonaria.

3607. Ranatra ? ——. (Nepidæ.)

Locality: Aix, France. Horizon: Ligurian.

1847. Hope. Trans. ent. soc. Lond., iv: 252.

3608. Reduvius ——. (Reduviidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1845. Berendt. Bernst. befindl. organ. reste vorw., i: 55.

3609. Reduvius —— (larva). (Reduviidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1856. Germ.-Ber. Berendt, Bernst. befindl. organ. reste vorw., ii, th. i: 20. *Pl.* 2, *fig.* 9.

See also Nabis protypa.

3610. Reduvius ——. (Reduviidæ.)

Compared with R. hirticornis.

Locality: Aix, France. Horizon: Ligurian.

1829. Serres. Géogn. terrains tert., 228.

3611. Reduvius? guttatus. (Coreidæ.)

Compared with R. personatus Linn., Europe.

Locality: Green River, Wyo. Horizon: Oligocene.

1878. Scudder. Bull. U. S. geol. surv. terr., iv: 771.
See also Corizus guttatus.

3612. Rhepocoris macrescens. (Coreidæ.)

Locality: Florissant, Colo. Horizon: Oligocene.

1890. Scudder. Tert. ins. N. A., 427.

3613. Rhepocoris minimus. (Coreidæ.)

Locality: Florissant, Colo. Horizon: Oligocene.

1890. Scudder. Tert. ins. N. A., 429 (minima).

3614. Rhepocoris prætectus. (Coreidæ.)

Locality: Florissant, Colo. Horizon: Oligocene.

1890. Scudder. Tert. ins. N. A., 427.

3615. Rhepocoris prævalens. (Coreidæ.)

Locality: Florissant, Colo. Horizon: Oligocene.

1890. Scudder. Tert. ins. N. A., 427–428. *Pl.* 25, *figs.* 4, 6, 7, 9, 10, 11, 14, 16; *pl.* 26, *fig.* 11.

3616. Rhepocoris propinquans. (Coreidæ.)

Locality: Florissant, Colo. Horizon: Oligocene.

1890. Scudder. Tert. ins. N. A., 428–429. *Pl.* 25, *fig.* 1; *pl.* 26, *fig.* 13.

3617. Rhyparochromus? terreus. (Lygæidæ.)

Locality: Green River, Wyo. Horizon: Oligocene.

1878. Scudder. Bull. U. S. geol. surv. terr., iv: 770–771.
See also Lyctocoris terreus.

3618. Rhyparochromus verrillii. (Lygæidæ.)

Locality: Florissant, Colo. Horizon: Oligocene.

1890. Scudder. Tert. ins. N. A., 400. *Pl.* 23, *figs.* 15, 30.

3619. Ricania multinervis. (Fulgoridæ.)

Locality: Prussian amber. Horizon: Ligurian.

1862. Giebel. Zeitschr. ges. naturw., xx: 313.

3620. Salda ——. (Saldidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1845. Berendt. Bernst. befindl. organ. reste vorw., i: 55.

3621. Salda ——. (Saldidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1856. Menge. Progr. petrischule Danzig, 1856: 19.

3622. Salda exigua. (Saldidæ.)

Compared with S. zosteræ.

Locality: Prussian amber. Horizon: Ligurian.

1856. Germ.-Ber. Berendt, Bernst. befindl. organ. reste vorw., ii, th. i: 20. *Pl.* 3, *fig.* 13.

3623. Sbenaphis lassa. (Aphides.)

Locality: Florissant, Colo. Horizon: Oligocene.

1890. Scudder. Tert. ins. N. A., 253.

3624. Sbenaphis quesneli. (Aphides.)

Localities: Quesnel, British Columbia; Florissant, Colo. Horizon: Oligocene.

1890. Scudder. Tert. ins. N. A., 250–252. *Pl.* 2, *figs.* 4, 5; *pl.* 18, *fig.* 12.

See also Lachnus quesneli.

3625. Sbenaphis uhleri. (Aphides.)

Locality: Florissant, Colo. Horizon: Oligocene.

1890. Scudder. Tert. ins. N. A., 252.

3626. Schizoneura ——. (Aphides.)

Locality: Prussian amber. Horizon: Ligurian.

1845. Berendt. Bernst. befindl. organ. reste vorw., i: 55.

3627. Schizoneuroides scudderi. (Aphides.)

Locality: Florissant, Colo. Horizon: Oligocene.

1883. Buckton. Monogr. Brit. aphid., iv: 178. *Pl.* 133, *fig.* 5.
1885. Scudder. Zittel, Handb. palaeont., i, th. ii: 780. *Fig.* 988.
1886. " Zittel-Barrois, Traité de paléont., ii: 780. *Fig.* 1005.
1890. " Tert. ins. N. A., 269–270. *Pl.* 18, *fig.* 2.

3628. Siphonophoroides antiqua. (Aphides.)

Locality: Florissant, Colo. Horizon: Oligocene.

1883. Buckton. Monogr. Brit. aphid., iv: 176. *Pl.* 133, *fig.* 1.
1890. Scudder. Tert. ins. N. A., 255–256. *Pl.* 18, *figs.* 3, 5, 7, 10.

3629. Siphonophoroides propinqua. (Aphides.)

Locality: Florissant, Colo. Horizon: Oligocene.

1890. Scudder. Tert. ins. N. A., 257.

3630. Siphonophoroides rafinesquei. (Aphides.)

Locality: Florissant, Colo. Horizon: Oligocene.

1890. Scudder. Tert. ins. N. A., 256–257.

3631. Siphonophoroides simplex. (Aphides.)

Locality: Florissant, Colo. Horizon: Oligocene.

1883. Buckton. Monogr. Brit. aphid., iv: 176–177. *Pl.* 133, *fig.* 2.

See also Tephraphis simplex.

3632. Spartocerus insignis. (Coreidæ.)

Locality: Radoboj, Croatia. Horizon: Mayencian.

1853. Heer. Insektenf. tertiärg. Oeningen, iii: 43–45. *Pl.* 3, *fig.* 9; *pl.* 8, *fig.* 10.
1855. " Ber. oesterreich. litt., 1850–'53: 200.
1856. Giebel. Insect. d. vorwelt, 347–348.

3633. Spartocerus maculatus. (Coreidæ.)

Locality: Radoboj, Croatia. Horizon: Mayencian.

1853. Heer. Insektenf. tertiärg. Oeningen, iii: 45–46. *Pl.* 3, *fig.* 10.
1855. " Ber. oesterreich. litt., 1850–'53: 200.
1856. Giebel. Insect. d. vorwelt, 348.

3634. Stenopamera subterrea. (Lygæidæ.)

Locality: Florissant, Colo. Horizon: Oligocene.

1890. Scudder. Tert. ins. N. A., 386. *Pl.* 23, *fig.* 7.

3635. Stenopamera tenebrosa. (Lygæidæ.)

Locality: Florissant, Colo. Horizon: Oligocene.

1890. Scudder. Tert. ins. N. A., 386. *Pl.* 23, *figs.* 16, 24.

3636. Stenopelta punctulata. (Pentatomidæ.)

Locality: Green River, Wyo. Horizon: Oligocene.

1890. Scudder. Tert. ins. N. A., 438. *Pl.* 7, *figs.* 12, 13.
See also Æthus punctulatus.

3637. Stenopoda gracilis. (Reduviidæ.)

Locality: Oeningen, Baden. Horizon: Tortonian.

1861. Heer. Rech. climat pays tert., 203 (undescr.).

3638. Stenopoda œningensis. (Reduviidæ.)

Locality: Oeningen, Baden. Horizon: Tortonian.

1861. Heer. Rech. climat pays tert., 203 (undescr.).

3639. Stenovelia nigra. (Veliidæ.)

Locality: Florissant, Colo. Horizon: Oligocene.

1890. Scudder. Tert. ins. N. A., 350. *Pl.* 22, *figs.* 8, 14.

3640. Sychnobrochus reviviscens. (Aphides.)

Locality: Florissant, Colo. Horizon: Oligocene.

1890. Scudder. Tert. ins. N. A., 268–269. *Pl.* 18, *fig.* 6.

3641. Syromastes affinis. (Coreidæ.)

Locality: Oeningen, Baden. Horizon: Tortonian.

1853. Heer. Insektenf. tertiärg. Oeningen, iii: 52. *Pl* 4, *fig.* 6; *pl.* 8, *fig.* 7.
1856. Giebel. Insect. d. vorwelt, 351.
1865. Heer. Urwelt der Schweiz, 362.
1872. " Monde prim. Suisse, 444.
1876. " Prim. world Switz., ii: 16.
1879. " Urwelt der Schweiz, 2e aufl., 387.

3642. Syromastes buchii. (Coreidæ.)

Locality: Oeningen, Baden. Horizon: Tortonian.

1853. Heer. Insektenf. tertiärg. Oeningen, iii: 54. *Pl.* 4, *fig.* 8.
1856. Giebel. Insect. d. vorwelt, 351.

3643. Syromastes coloratus. (Coreidæ.)

Compared with S. scapha F., Europe.

Locality: Oeningen, Baden. Horizon: Tortonian.

1853. Heer. Insektenf. tertiärg. Oeningen, iii: 52-54, 128. *Pl.* 4, *fig.* 7; *pl.* 8, *fig.* 8.
1856. Giebel. Insect. d. vorwelt, 351.
1865. Heer. Urwelt der Schweiz, 391. *Fig.* 302.
1872. " Monde prim. Suisse, 479. *Fig* 302.
1876. " Prim. world Switz., ii: 50. *Fig.* 302, on *p.* 49.
1879. " Urwelt der Schweiz, 2ᵉ aufl., 416. *Fig.* 344, on *p.* 417.

3644. Syromastes seyfriedi. (Coreidæ.)

Locality: Oeningen, Baden. Horizon: Tortonian.

1853. Heer. Insektenf. tertiärg. Oeningen, iii: 51-52. *Pl.* 4, *fig.* 5; *pl.* 8, *fig.* 6.
1856. Giebel. Insect. d. vorwelt, 351.
1865. Heer. Urwelt der Schweiz, 390.
1872. " Monde prim. Suisse, 479.
1876. " Prim. world Switz, ii: 50.
1879. " Urwelt der Schweiz, 2ᵉ aufl., 416.

3645. Syrtis ———. (Phymatidæ.)

Locality: Aix, France. Horizon: Ligurian.

1829. Serres. Géogn. terrains tert., 226-227.

3646. Systellonotus ———. (Capsidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1890. Scudder. Tert. ins. N. A., 362.

3647. Tagalodes inermis. (Reduviidæ.)

Locality: Florissant, Colo. Horizon: Oligocene.

1890. Scudder. Tert. ins. N. A., 357. *Pl* 26, *fig.* 15.

3648. Teleoschistus antiquus. (Pentatomidæ.)

Locality: Quesnel, British Columbia. Horizon: ———

1890. Scudder. Tert. ins. N. A., 454-456. *Pl.* 2, *figs.* 17-19.
See also Euschistus antiquus.

3649. Teleoschistus placatus. (Pentatomidæ.)

Locality: Florissant, Colo. Horizon: Oligocene.

1890. Scudder. Tert. ins. N A., 457. *Pl.* 28, *fig* 3.

3650 Teleoschistus rigoratus. (Pentatomidæ.)

Locality: Florissant, Colo. Horizon: Oligocene.

1890. Scudder. Tert. ins. N. A., 456-457. *Pl* 28, *figs* 2, 14.

3651. **Telmatrechus parallelus.** (Hydrobatidæ.)

Locality: Twin Creek, Wyo. Horizon: ———.

1890. Scudder. Tert. ins. N. A., 353. *Pl.* 4, *fig.* 1.

3652. **Telmatrechus ståli.** (Hydrobatidæ.)

Compared with Hygrotrechus remigis (Say).

Locality: Similkameen River, British Columbia. Horizon: ———.

1890. Scudder. Tert. ins. N. A., 351-353. *Pl.* 2, *figs.* 11, 12.
See also Hygrotrechus ståli.

3653. **Tenor speluncæ.** (Coreidæ.)

Locality: Florissant, Colo. Horizon: Oligocene.

1890. Scudder. Tert. ins. N. A., 425.

3654. **Tephraphis simplex.** (Aphides.)

Locality: Florissant, Colo. Horizon: Oligocene.

1890. Scudder. Tert. ins. N. A., 259-260. *Pl.* 18 *fig.* 4.
See also Siphonophoroides simplex.

3655. **Tephraphis walshii.** (Aphides.)

Locality: Florissant, Colo. Horizon: Oligocene.

1890. Scudder. Tert. ins. N. A., 260. *Pl.* 18, *fig.* 19.

3656. **Tettigometra debilis.** (Fulgoridæ.)

Locality: Radoboj, Croatia. Horizon: Mayencian.

1853. Heer. Insektenf. tertiärg. Oeningen, iii: 91-92. *Pl.* 13, *fig.* 11.
1856. Giebel. Insect. d. vorwelt, 378.

3657. **Tettigonia** ———. (Jassides.)

Locality: Prussian amber. Horizon: Ligurian.

1845. Berendt. Bernst. befindl. organ. reste vorw., i: 55.

3658. **Tettigonia** ———. (Jassides.)

Compared with T. spumaria.

Locality: Aix, France. Horizon: Ligurian.

1829. Curtis. Edinb. new phil. journ., vii: 296. *Pl.* 6, *fig.* 6.
1829. " Murchison-Lyell, Tert. form. Aix, 12. *Pl.* 6, *fig.* 6.
1839. Mantell. Wonders of geology, i: 248. *Fig.* 1.
See also Aphrophora spumifera, etc.

3659. **Tettigonia** ———. (Jassides.)

Locality: Aix, France. Horizon: Ligurian.

1829. Serres. Géogn. terrains tert., 228.

3660. **Tettigonia antiqua.** (Jassides.)

Locality: Radoboj, Croatia. Horizon: Mayencian.

1853. Heer. Insektenf. tertiärg. Oeningen, iii: 109-110. *Pl.* 12, *fig.* 5.
1855. " Ber. oesterreich. litt., 1850-'53: 202.
1856. Giebel. Insect. d. vorwelt, 384.

3661. Tettigonia morio. (Jassides.)

Locality: Radoboj, Croatia. Horizon: Mayencian.

1853. Heer. Insektenf. tertiärg. Oeningen, iii: 110. *Pl.* 12, *fig.* 4.
1855. " Ber. oesterreich. litt., 1850-'53: 203.
1856. Giebel. Insect. d. vorwelt, 384.

3662. Tettigonia obtecta. (Jassides.)

Locality: White River, Colo. Horizon: Oligocene.

1877. Scudder. Bull. U. S. geol. surv. terr., iii: 761.
1890. " Tert. ins. N. A., 304. *Pl.* 5, *figs.* 58, 59.

3663. Tettigonia priscomarginata. (Jassides.)

Compared with Aulacipes irroratus (Fabr.).

Locality: Green River, Wyo. Horizon: Oligocene.

1890. Scudder. Tert. ins. N. A., 302-303. *Pl.* 7, *fig.* 4.

3664. Tettigonia priscotincta. (Jassides.)

Locality: Florissant, Colo. Horizon: Oligocene.

1890. Scudder. Tert. ins. N. A., 303. *Pl.* 19, *fig.* 9.

3665. Tettigonia priscovariegata. (Jassides.)

Locality: Green River, Wyo. Horizon: Oligocene.

1890. Scudder. Tert. ins. N. A., 303-304.

3666. Tettigonia proavia. (Jassides.)

Locality: Prussian amber. Horizon: Ligurian.

1856. Germ.-Ber. Berendt, Bernst. befindl. organ. reste vorw., ii, th. i: 9-10. *Pl.* 1, *fig.* 13.

3667. Tettigonia spumaria. (Jassides.)

Locality: Aix, France. Horizon: Ligurian.

1854. Mantell. Medals of creation, 2d ed., ii: 558. *Fig.* 183.1.
See also Aphrophora spumifera, etc.

3668. Tettigonia terebrans. (Jassides.)

Compared with T. viridis, Europe.

Locality: Prussian amber. Horizon: Ligurian.

1856. Germ.-Ber. Berendt, Bernst. befindl. organ. reste vorw., ii, th. i: 10. *Pl.* 1, *fig.* 14.

3669. Tetyra hassii. (Pentatomidæ.)

Locality: Oeningen, Baden. Horizon: Tortonian.

1853. Heer. Insektenf. tertiärg. Oeningen, iii: 11-12. *Pl.* 1, *fig.* 4; *pl.* 6, *fig.* 3.
1856. Giebel. Insect. d. vorwelt, 335.

3670. Thamnotettix fundi. (Jassides.)

Locality: Florissant, Colo. Horizon: Oligocene.

1890. Scudder. Tert. ins. N. A., 310. *Pl.* 19, *fig.* 20.

3671. Thamnotettix gannetti. (Jassides.)

Locality: Green River, Wyo. Horizon: Oligocene.

1890. Scudder. Tert. ins. N. A., 309–310. *Pl.* 6, *fig.* 33; *pl.* 7, *fig.* 5.

3672. Thamnotettix mutilata. (Jassides.)

Locality: Green River, Wyo. Horizon: Oligocene.

1890. Scudder. Tert. ins. N. A., 309. *Pl.* 7, *fig.* 6.

3673. Thlibomenus limosus. (Pentatomidæ.)

Locality: Florissant, Colo. Horizon: Oligocene.

1890. Scudder. Tert. ins. N. A., 450. *Pl.* 28, *fig.* 12.

3674. Thlibomenus macer. (Pentatomidæ.)

Locality: Florissant, Colo. Horizon: Oligocene.

1890. Scudder. Tert. ins. N. A., 451.

3675. Thlibomenus parvus. (Pentatomidæ.)

Locality: Florissant, Colo. Horizon: Oligocene.

1890. Scudder. Tert. ins. N. A., 449–450. *Pl.* 19, *fig.* 23.

3676. Thlibomenus perennatus. (Pentatomidæ.)

Locality: Florissant, Colo. Horizon: Oligocene.

1890. Scudder. Tert. ins. N. A., 450.

3677. Thlibomenus petreus. (Pentatomidæ.)

Locality: Florissant, Colo. Horizon: Oligocene.

1890. Scudder. Tert. ins. N. A., 449.

3678. Thlimmoschistus gravidatus. (Pentatomidæ.)

Locality: Florissant, Colo. Horizon: Oligocene.

1890. Scudder. Tert. ins. N. A., 463–464. *Pl.* 28, *figs.* 7, 19.

3679. Thnetoschistus revulsus. (Pentatomidæ.)

Locality: Florissant, Colo. Horizon: Oligocene.

1890. Scudder. Tert. ins. N. A., 458. *Pl.* 28, *fig.* 4.

3680. Thrips annosa. (Physapodes.)

Locality: Oeningen, Baden. Horizon: Tortonian.

1865. Heer. Urwelt der Schweiz, 367. *Fig.* 233 on *p.* 366.
1872. " Monde prim. Suisse, 450. *Fig.* 233 on *p.* 449.
1876. " Prim. world Switz., ii: 22. *Fig.* 233 on *p.* 21.
1879. " Urwelt der Schweiz, 2ᵉ aufl., 392. *Fig.* 274.

3681. Thrips annulata. (Physapodes.)

Locality: Prussian amber. Horizon: Ligurian.

1856. Menge. Progr. petrischule Danzig, 1856: 11–12.

3682. Thrips antiqua. (Physapodes.)

Locality: Aix, France. Horizon: Ligurian.

1856. Heer. Viert. naturf. gesellsch. Zürich, i: 27. *Pl.* 2, *figs.* 9, 10.
1873. Oustalet. Bull. soc. philom. Paris, x: 24–25.

3683. Thrips breviventris. (Physapodes.)

Locality: Rott, Rhenish Prussia. Horizon: Aquitanian.

1887. Schlechtend. Zeitschr. ges. naturw., lx: 572–574. *Pl.* 4, *figs.* 13–15.

3684. Thrips capito. (Physapodes.)

Locality: Rott, Rhenish Prussia. Horizon: Aquitanian.

1887. Schlechtend. Zeitschr. ges. naturw., lx: 579–582. *Pl.* 5, *fig.* 20.

3685. Thrips electrina. (Physapodes.)

Locality: Prussian amber. Horizon: Ligurian.

1856. **Menge.** Progr. petrischule Danzig, 1856: 12.

3686. Thrips excellens. (Physapodes.)

Locality: Rott, Rhenish Prussia. Horizon: Aquitanian.

1887. Schlechtend. Zeitschr. ges. naturw., lx: 564–567. *Pl.* 3, *figs.* 2–8.

3687. Thrips formicoides. (Physapodes.)

Locality: Aix, France. Horizon: Ligurian.

1873. Oustalet. Bull. soc. philom. Paris, x: 25–26.

3688. Thrips longula. (Physapodes.)

Locality: Rott, Rhenish Prussia. Horizon: Aquitanian.

1887. Schlechtend. Zeitschr. gesellsch. naturw., lx: 568–570. *Pl.* 3, *fig.* 9.

3689. Thrips minima. (Physapodes.)

Locality: Rott, Rhenish Prussia. Horizon: Aquitanian.

1887. Schlechtend. Zeitschr. gesellsch. naturw., lx: 574–577. *Pl.* 4, *figs.* 16–17.

3690. Thrips obsoleta. (Physapodes.)

Locality: Aix, France. Horizon: Ligurian.

1873. Oustalet. Bull. soc. philom. Paris, x: 25.

3691. Thrips œningensis. (Physapodes.)

Locality: Oeningen, Baden. Horizon: Tortonian.

1865. Heer. Urwelt der Schweiz, 367.
1872. " Monde prim. Suisse, 450.
1876. " Prim. world Switz., ii: 22.
1879. " Urwelt der Schweiz, 2e aufl., 392.

3692. Thrips pennifera. (Physapodes.)

Locality: Rott, Rhenish Prussia. Horizon: Aquitanian.

1887. Schlechtend. Zeitschr. gesellsch. naturw., lx: 570–572. *Pl.* 3, *figs.* 10–12.

3693. Thrips pygmæa. (Physapodes.)

Locality: Rott, Rhenish Prussia. Horizon: Aquitanian.

1887. Schlechtend. Zeitschr. gesellsch. naturw., lx: 577–579. *Pl.* 4, *figs.* 18, 19.

3694. Thrips sericata. (Physapodes.)

Locality: Prussian amber. Horizon: Ligurian.

1856. **Menge.** Progr. petrischule Danzig, 1856: 12.

3695. Tingis ——. (Tingididæ.)

Locality: Prussian amber. Horizon: Ligurian.

1845. Berendt. Bernst. befindl. organ. reste vorw., i: 55.

3696. Tingis ——. (Tingididæ.)

Compared with T. cardui.

Locality: Aix, France. Horizon: Ligurian.

1847. Hope. Trans. ent. soc. Lond., iv: 252.

3697. Tingis ——. (Tingididæ.)

Locality: Florissant, Colo. Horizon: Oligocene.

1881. Scudder. Bull. U. S. geol. surv. terr., vi: 292.

3698. Tingis ——. (Tingididæ.)

Locality: Aix, France. Horizon: Ligurian.

1829. Serres. Géogn. terrains tert., 227.

3699. Tingis obscura. (Tingididæ.)

Locality: Radoboj, Croatia. Horizon: Mayencian.

1853. Heer. Insektenf. tertiärg. Oeningen, iii: 74–75. *Pl.* 13, *fig.* 15.
1856. Giebel. Insect. d. vorwelt, 363.

3700. Tingis quinquecarinata. (Tingididæ.)

Locality: Prussian amber. Horizon: Ligurian.

1856. Germ.-Ber. Berendt, Bernst. befindl. organ. reste vorw., ii, th. i: 23–24. *Pl.* 3, *fig.* 19.

See also Eotingis quinquecarinata.

3701. Tingis wollastoni. (Tingididæ.)

Locality: Oeningen, Baden. Horizon: Tortonian.

1865. Heer. Urwelt der Schweiz (Monanthia in text). *Fig.* 307 on *p.* 391.
1872. " Monde prim. Suisse. *Fig.* 307 on *p.* 479.
1876. " Prim. world Switz., ii. *Fig.* 307 on *p.* 49.
1879. " Urwelt der Schweiz, 2ᵉ aufl. *Fig.* 349 on *p.* 417.

See also Monanthia wollastoni.

3702. Tiroschistus indurescens. (Pentatomidæ.)

Locality: Florissant, Colo. Horizon: Oligocene.

1890. Scudder. Tert. ins. N. A., 463. *Pl.* 22, *fig.* 4.

3703. Tiromerus tabifluus. (Lygæidæ.)

Locality: Florissant, Colo. Horizon: Oligocene.

1890. Scudder. Tert. ins. N. A., 402

3704. Tiromerus torpefactus. (Lygæidæ.)

Locality: Florissant, Colo. Horizon: Oligocene.

1890. Scudder. Tert. ins. N. A., 402.

3705. Trapezonotus exterminatus. (Lygæidæ.)

Locality: Florissant, Colo. Horizon: Oligocene.

1890. Scudder. Tert. ins. N. A., 395. *Pl.* 22, *fig.* 9; *pl.* 23, *figs.* 11, 22, 25,

3706. Trapezonotus stygialis. (Lygæidæ.)

Locality: Florissant, Colo. Horizon: Oligocene.

1890. Scudder. Tert. ins. N. A., 396. *Pl.* 27, *fig.* 11.

Triecophora sanguinolenta. See Triecphora sanguinolenta.

3707. Trieophora sanguinolenta (recent). (Cercopidæ.)

Locality: Gurnet Bay, Isle of Wight. Horizon: Bembridge Limestone.

[1843. Amyot-Serv. Hémiptères, 561–562.]
1879. Woodward. Quart. journ. geol. soc. Lond., xxxv: 344.
1879. " Geol. mag., n. s., v: 88.
1885. Scudder. Zittel, Handb. palaeont., i, th. ii: 782 (Triecophora.)
1886. " Zittel-Barrois, Traité de paléont., ii: 781.
1886. " Bull. U. S. geol. surv., No. 31: 60.

3708. Typhlocyba ———. (Jassides.)

Locality: Prussian amber. Horizon: Ligurian.

1845. Berendt. Bernst. befindl. organ. reste vorw., i: 55.

3709. Typhlocyba ———. (Jassides.)

Locality: Florissant, Colo. Horizon: Oligocene.

1881. Scudder. Bull. U. S. geol. surv. terr., vi: 293 (Typhlocypha).
1883. " Ann. rep. U. S. geol. surv. terr., xii: 282.

3710. Typhlocyba bremii. (Jassides.)

Locality: Radoboj, Croatia. Horizon: Mayencian.

1853. Heer. Insektenf. tertiärg. Oeningen, iii: 117–119. *Pl.* 13, *fig.* 3.
1855. " Ber. oesterreich. litt., 1850–'53: 203.
1856. Giebel. Insect. d. vorwelt, 387.

3711. Typhlocyba carbonaria. (Jassides.)

Locality: Stösschen, Austria. Horizon: Miocene.

1859. Heyden. Palaeontogr., viii: 11. *Pl.* 1, *fig.* 14.

3712. Typhlocyba encaustica. (Jassides.)

Locality: Prussian amber. Horizon: Ligurian.

1856. Germ.-Ber. Berendt, Bernst. befindl. organ. reste vorw., ii, th. i: 7. *Pl.* 1, *fig.* 9.

3713. Typhlocyba resinosa. (Jassides.)

Compared with T. rosæ.

Locality: Prussian amber. Horizon: Ligurian.

1856. Germ.-Ber. Berendt, Bernst. befindl. organ. reste vorw., ii, th. i: 8. *Pl.* 2, *fig.* 2.

Typhlocypha ———. See Typhlocyba ———.

COLEOPTERA.

3714. ——— ———.

Localities: Le Puy, Auvergne, France. Horizon: ———.

1845. Brodie. Foss. ins. sec. rocks Engl., 107.

3715. ——— ———.

Localities: Lenden, Colchester, England. Horizon: Postglacial drift.
1874. Brodie. Distr. corr. foss. ins., 13.

3716. ——— ———.

Locality: Stanway, England. Horizon: Peat.
1858. Brown. Geologist, 1858: 254.

3717. ——— ———.

Locality: Montagne Ste. Catherine, near Rouen, France. Horizon: "Roche calcaire."
1826. Desmoulins. Ferr., Bull. sc. nat., ix: 253.

3718. ——— ———.

Locality: Peckham, England. Horizon: Paludina beds, Lower Eocene.
1861. Evans. Geologist, iv: 39. *Fig.*

3719. ——— ——— (several).

Locality: Nantucket amber, Mass. Horizon: ———.
1879. Goldsmith. Proc. acad. nat. sc. Phil., 1879: 207.

3720. ——— ———.

Locality: Scotland. Horizon: Interglacial.
1880. Goss. Entom. monthl. mag., xvi: 198. (On the authority of Buchanan White.)

3721. ——— ———.

Locality: Oldham, England. Horizon: Pleistocene (peat).
1881. Hollingworth. Quart. journ. geol. soc. Lond., xxxvii: 713.

3722. ——— ———.

Locality: Grasseth, Bohemia. Horizon: ———.
1857. Jokély. Jahrb. geol. reichsanst., viii: 502.

3723. ——— ———.

Locality: Drigg, England. Horizon: Quaternary.
1881. Kendall. Quart. journ. geol. soc. Lond., xxxvii: 34.

3724. ——— ———.

Locality: St. Bees, England. Horizon: Quaternary.
1881. Kendall. Quart. journ. geol. soc. Lond., xxxvii: 35.

3725. ——— ———.

Locality: Parkhurst Barracks, England. Horizon: London clay.
1847. Mantell. Geol. exc. Isle of Wight, 140.

3726. ——— ——— (8 sp.).

Locality: Rocky River, Sydney flats, Australia. Horizon: ———.
1870. Moore. Quart. journ. geol. soc. Lond., xxvi: 263. *Pl.* 18, *figs.* 2–9.

3727. ——— ———.

Locality: Senigaglia, Italy. Horizon: Helvetian ?.

1842. Procaccini. Nuov. ann. sc. nat., vii: 449.

3728. ——— ——— (coprolites of larvæ).

Locality: Westerwald, Germany. Horizon: "Braunkohl."

1852. Quenstedt. Handb. petref., 314. *Pl.* 24, *fig.* 7.

3729. ——— ———.

Locality: Prussian amber. Horizon: Ligurian.

1838. Robert. Bull. soc. géol. France, ix: 114.

3730. ——— ——— (borings).

Localities: Auzers, Mauriac, France. Horizon: "Lignite."

1875. Rouchy. Petites nouv. entom., i: 551.

3731. ——— ——— (eggs and larvæ).

Locality: Bodensee, Baden. Horizon: Alluvium.

1851. Stizenberger. Uebers. verstein. Baden, 119.

3732. ——— ———.

Locality: Lincolnshire coast, England. Horizon: Peat beds.

1830. Taylor. Loud., Mag. nat. hist., iii: 361.

3733. ——— ———.

Locality: Mount's Bay, England. Horizon: "Submarine forest."

1830. Taylor. Loud., Mag. nat. hist., iii: 361.

3734. ——— ———.

Locality: Norfolk coast, England. Horizon: Peat beds.

1830. Taylor. Loud., Mag. nat. hist., iii: 361.

3735. ——— ———.

Locality: Yorkshire coast, England. Horizon: Peat beds.

1830. Taylor. Loud., Mag. nat. hist., iii: 361.

3736. ——— ———.

Locality: Lexden, England. Horizon: Peat beds.

1863. Wollaston. Quart. journ. geol. soc. Lond., xix: 401, No. 10.

3737. ——— ———. ("Schwimmkäfer.")

Locality: Oberelsass. Horizon: Middle Oligocene.

1885. Foerster. Tagebl. versamml. deutsch. naturf., lviii: 392.
1885. " Mitth. oberelsäss. tertiär, 7.

3738. ——— ——— (several). ("Water beetles.")

Locality: Florissant, Colo. Horizon: Oligocene.

1881. Scudder. Bull. U. S. geol. surv. terr., vi: 291.
1883. " Ann. rep. U. S. geol. surv. terr., xii: 281.

3739. ——— ———. ("Water beetle.")

Locality: Lexden, England. Horizon: Peat beds.

1863. Wollaston. Quart. journ. geol. soc. Lond., xix: 401 No. 11-12.

——— ——— (Aleocharini). See ——— ——— (Staphylinidæ-Aleocharini).

3740. ——— ———. (Anthicidæ; "Notoxida.")

Locality: Prussian amber. Horizon: Ligurian.

1856. Menge. Progr. petrischule Danzig, 1856: 21.

——— ——— (Bostrychini.) See ——— ——— (Ptinidæ-Bostrychini).

3741. ——— ——— (several). (Bruchidæ.)

Locality: Florissant, Colo. Horizon: Oligocene.

1881. Scudder. Bull. U. S. geol. surv. terr., vi: 292.
1883. " Ann. rep. U. S. geol. surv. terr., xii: 281.

3742. ——— ———. (Buprestidæ.)

Locality: Dorset, England. Horizon: Bagshot series, Middle Eocene.

1870. Brodie. Geol. mag., vii: 141.

3743. ——— ———. (Buprestidæ.,

Locality: Bournemouth, England. Horizon: Middle Eocene.

1878. Goss. Proc. ent. soc. Lond., 1878: 8.

3744. ——— ———. (Buprestidæ.)

Locality: Salzhausen, Germany. Horizon: Miocene.

1856. Heyden. Palaeontogr., iv: 200. *Pl.* 38, *fig.* 4.

3745. ——— ———. (Buprestidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1856. Menge. Progr. petrischule Danzig, 1856: 22.

3746. ——— ——— (several). (Buprestidæ.)

Locality: Florissant, Colo. Horizon: Oligocene.

1881. Scudder. Bull. U. S. geol. surv. terr., vi: 291–292.
1883. " Ann. rep. U. S. geol. surv. terr., xii: 281.

3747. ——— ———. (Buprestidæ.)

Locality: Creech, near Corfe, England. Horizon: ———.

1854. Westwood. Quart. journ. geol. soc. Lond., x: 381, 395. *Pl.* 16, *fig.* 34.

3748. ——— ———. (Buprestidæ.)

Locality: Lexden, England. Horizon: Peat beds.

1863. Wollaston. Quart. journ. geol. soc. Lond., xix: 401, No. 8.

3749. ——— ———. (Carabidæ or Rhynchophora.)

Locality: Antrim, Ireland. Horizon: Tertiary basalt beds.

1869. Baily. Quart. journ. geol. soc. Lond., xxv: 359–362. Compared to the Entimides, p. 362, to Carabidæ, p. 360. *Pl.* 14, *figs.* 14*ab*.

3750. —— ——. (Carabidæ or Rhynchophora.)

Locality: Antrim, Ireland. Horizon: Tertiary basalt beds.

1869. Baily. Quart. journ. geol. soc. Lond., xxv: 359-362. Compared to Apion, p. 362, to Carabidæ, p. 360. *Pl.* 14, *fig.* 15.

3751. —— ——. (Carabidæ.)

Locality: Brunstatt, Alsatia. Horizon: Middle Oligocene.

1889. Foerster. Mitth. comm. geol. Elsass-Lothr., ii: 103.

3752. —— ——. (Carabidæ.)

Locality: Florissant, Colo. Horizon: Oligocene.

1881. Scudder. Bull. U. S. geol. surv. terr., vi: 291.
1883. " Ann. rep. U. S. geol. surv. terr., xii: 281.

3753. —— ——. (Carabidæ.)

Locality: Caverne de Lunel Vieil, Hérault, France. Horizon: Postpliocene.

1827. Serres. Mém. soc. linn. Paris, v: 457.

3754. —— ——. (Carabidæ.)

Locality: Lexden, England. Horizon: Peat beds.

1863. Wollaston. Quart. journ. geol. soc. Lond., xix: 401, No. 7.

3755. —— ——. (Cerambycidæ.)

Locality: Brunstatt, Alsatia. Horizon: Middle Oligocene.

1889. Foerster. Mitth. comm. geol. Elsass-Lothr., ii: 102.

3756. —— —— (several). (Cerambycidæ.)

Locality: Florissant, Colo. Horizon: Oligocene.

1881. Scudder. Bull. U. S. geol. surv. terr., vi: 292.
1883. " Ann. rep. U. S. geol. surv. terr., xii: 281.

—— —— (Cetonini). See —— —— (Scarabæidæ-Cetonini).

3757. —— ——. (Chrysomelidæ.)

Locality: Schössnitz, Austria. Horizon: Miocene.

1855. Göppert. Tert. flora Schössnitz, vii. *Pl.* 26, *fig.* 56.
See also Curculionites silesiacus, etc.

3758. —— ——. (Chrysomelidæ-Halticini.)

Locality: Prussian amber. Horizon: Ligurian.

1838. Robert. Bull. soc. géol. France, ix: 114 (Altises).

3759. —— —— (several). (Chrysomelidæ.)

Locality: Florissant, Colo. Horizon: Oligocene.

1881. Scudder. Bull. U. S. geol. surv. terr., vi: 292.
1883. " Ann. rep. U. S. geol. surv. terr., xii: 282.

3760. —— ——. (Chrysomelidæ.)

Locality: Caverne de Lunel Vieil, Hérault, France. Horizon: Postpliocene.

1827. Serres. Mém. soc. linn. Paris, v: 457.

3761. —— ——. (Chrysomelidæ or Curculionidæ.)
Locality: Creech, near Corfe, England. Horizon: ——.
1854. Westwood. Quart. journ. geol. soc. Lond., x: 382.

3762. —— ——. (Cleridæ.)
Locality: Prussian amber. Horizon: Ligurian.
1856. Menge. Progr. petrischule Danzig, 1856: 21.

3763. —— ——. (Cleridæ.)
Locality: Florissant, Colo. Horizon: Oligocene.
1881. Scudder. Bull. U. S. geol. surv. terr., vi: 292.
1882. " Ann. rep. U. S. geol. surv. terr., xii: 282.

3764. —— —— (several). (Coccinellidæ.)
Locality: Florissant, Colo. Horizon: Oligocene.
1881. Scudder. Bull. U. S. geol. surv. terr., vi: 292.
1883. " Ann. rep. U. S. geol. surv. terr., xii: 282.

3765. —— ——. (Curculionidæ.)
Locality: Dorset, England. Horizon: Bagshot series, Middle Eocene.
1870. Brodie. Geol. mag., vii: 141.

3766. —— ——. (Curculionidæ.)
Locality: Corfe, England. Horizon: ——.
1874. Brodie. Distr. corr. foss. ins., 13.

3767. —— ——. (Curculionidæ.)
Locality: Bournemouth, England. Horizon: Middle Eocene.
1878. Goss. Proc. ent. soc. Lond., 1878: 8.

3768. —— ——. (Curculionidæ.)
Locality: Prussian amber. Horizon: Ligurian.
1856. Menge. Progr. petrischule Danzig, 1856: 22.

3769. —— ——. (Curculionidæ or Chrysomelidæ.)
Locality: Creech, near Corfe, England. Horizon: ——.
1854. Westwood. Quart. journ. geol. soc. Lond., x: 382.

3770. —— ——. (Curculionidæ.)
Locality: Creech, near Corfe, England. Horizon: ——.
1854. Westwood. Quart. journ. geol soc. Lond., x: 382, 395. *Pl.* 16, *fig.* 35.

3771. —— ——. (Dascyllidæ.)
Locality: Prussian amber. Horizon: Ligurian.
1856. Menge. Progr. petrischule Danzig, 1856: 21 (Cyphones).

3772. —— —— (several). (Dermestidæ.)
Locality: Florissant, Colo. Horizon: Oligocene.
1881. Scudder. Bull. U. S. geol. surv. terr., vi: 292.
1883. " Ann. rep. U. S. geol. surv. terr., xii: 282.

3773. ——— ———. (Dytiscidæ.)

Locality: Brunstatt, Alsatia. Horizon: Middle Oligocene.

1885. Foerster. Tagebl. versamml. deutsch. naturf., lviii: 392.
1885. " Mitth. oberelsäss. tertiär., 7.

3774. ——— ———. (Elateridæ.)

Locality: Prussian amber. Horizon: Ligurian.

1856. Menge. Progr. petrischule Danzig, 1856: 22.

3775. ——— ———. (Elateridæ?.)

Locality: Nicola River, British Columbia. Horizon: ———.

1879. Scudder. Rep. progr. geol. surv. Can., 1877-'78: 182B.
1879. " Ins. tert. Nicola, 7.
1890. " Tert. ins. N. A., 498. *Pl.* 2, *fig.* 28.

3776. ——— ——— (several). (Elateridæ.)

Locality: Florissant, Colo. Horizon: Oligocene.

1881. Scudder. Bull. U. S. geol. surv. terr., vi: 292.
1883. " Ann. rep. U. S. geol. surv. terr., xii: 281.

——— ——— (Geotrupini). See ——— ——— (Scarabæidæ-Geotrupini).

——— ——— (Halticini). See ——— ——— (Chrysomelidæ-Halticini).

——— ——— (Helopini). See ——— ——— (Tenebrionidæ-Helopini).

3777. ——— ——— (several). (Histeridæ.)

Locality: Florissant, Colo. Horizon: Oligocene.

1881. Scudder. Bull. U. S. geol. surv. terr., vi: 292.
1883. " Ann. rep. U. S. geol. surv. terr., xii: 282.

3778. ——— ———. (Lampyridæ.)

Locality: Prussian amber. Horizon: Ligurian.

1856. Menge. Progr. petrischule Danzig, 1856: 21.

3779. ——— ———. (Lucanidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1856. Menge. Progr. petrischule Danzig, 1856: 23.

3780. ——— ——— (several). (Malacodermata.)

Locality: Florissant, Colo. Horizon: Oligocene.

1881. Scudder. Bull. U. S. geol. surv. terr., vi: 292.
1883. " Ann. rep. U. S. geol. surv. terr., xii: 281.

3781. ——— ———. (Meloidæ.)

Compared with Lytta vesicatoria.

Locality: Prussian amber. Horizon: Ligurian.

1847. Hammerschm. Haidinger, Berichte, i: 39.

3782. ——— ———. (Meloidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1856. Menge. Progr. petrischule Danzig, 1856: 21.

3783. —— —— (several). (Meloidæ.)

Locality: Florissant, Colo. Horizon: Oligocene.

1881. Scudder. Bull. U. S. geol. surv. terr., vi: 292.
1883. " Ann. rep. U. S. geol. surv. terr., xii: 281.

3784. —— ——. (Mordellidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1856. Menge. Progr. petrischule Danzig, 1856: 21.

3785. —— —— (several). (Mordellidæ.)

Locality: Florissant, Colo. Horizon: Oligocene.

1881. Scudder. Bull. U. S geol. surv. terr., vi: 292.
1883. " Ann. rep. U. S. geol. surv. terr., xii: 281.

3786. —— ——. (Nitidulidæ.)

Locality: Brunstatt, Alsatia. Horizon: Middle Oligocene.

1889. Foerster. Mitth. comm. geol. Elsass-Lothr., ii: 103.

3787. —— —— (several). (Nitidulidæ.)

Locality: Florissant, Colo. Horizon: Oligocene.

1881. Scudder. Bull. U. S. geol. surv. terr., vi: 291.
1883. " Ann. rep. U. S. geol. surv. terr., xii: 281.

3788. —— ——. (Ptinidæ-Bostrychini.)

Locality: Prussian amber. Horizon: Ligurian.

1831. Burmeister. Oken, Isis, 1831: 1100.

3789. —— —— (several). (Ptinidæ.)

Locality: Florissant, Colo. Horizon: Oligocene.

1881. Scudder. Bull. U. S. geol. surv. terr., vi: 292.
1883. " Ann. rep. U. S. geol. surv. terr., xii: 282.

—— —— (Ptinidæ). See —— —— (Scolytidæ or Ptinidæ).

—— —— (Ptinidæ). See —— —— (Scolytidæ) Kolbe.

3790. —— —— (many). (Rhynchophora.)

Locality: Florissant, Colo. Horizon: Oligocene.

1881. Scudder. Bull. U. S. geol. surv. terr., vi: 292.
1883. " Ann. rep. U. S. geol. surv. terr., xii: 282.

—— —— (Rhynchophora). See —— —— (Carabidæ or Rhynchophora) Baily.

3791. —— ——. (Scarabæidæ-Geotrupini.)

Locality: Kutschlin, Bohemia. Horizon: Miocene.

1881. Deichmüller. Foss. ins. diatomeensch. Kutschlin, 12–13, 39. *Pl.* 21, *fig.* 3.
1881. " Nova acta acad. leop.-carol., xlii: 305–306, 331. *Pl.* 21, *fig.* 3.

3792. —— —— (several). (Scarabæidæ.)

Locality: Florissant, Colo. Horizon: Oligocene.

1881. Scudder. Bull. U. S. geol. surv. terr., vi: 291.
1883. " Ann. rep. U. S. geol. surv. terr., xii: 281.

3793. ——— ———. (Scarabæidæ-Cetonini.)

Locality: Caverne de Lunel Vieil, Hérault, France. Horizon: Postpliocene.

1827. Serres. Mém. soc. linn. Paris, v: 457.

3794. ——— ———. (Scolytidæ or Ptinidæ.)

Locality: Zschipkau, Nieder Lausitz. Horizon: Braunkohl.

1888. Kolbe. Zeitschr. deutsch. geol. gesellsch., xl: 135. *Pl.* 11, *fig.* 6x.

3795. ——— ———. (Scolytidæ.)

Locality: Scarboro, Canada. Horizon: Interglacial.

1886. Scudder. Can. ent., xviii: 194–196.
See also **Hylastes squalidens.**

3796. ——— ——— (several). (Silphidæ.)

Locality: Florissant, Colo. Horizon: Oligocene.

1881. Scudder. Bull. U. S. geol. surv. terr., vi: 292.
1883. " Ann. rep. U. S. geol. surv. terr., xii: 282.

3797. ——— ———. (Staphylinidæ-Aleocharini.)

Locality: Prussian amber. Horizon: Ligurian.

1845. Berendt. Bernst. befindl. organ. reste vorw., i: 56.

3798. ——— ———. (Staphylinidæ.)

Locality: Brunstatt, Alsatia. Horizon: Middle Oligocene.

1889. Foerster. Mitth. comm. geol. Elsass.-Lothr., ii: 103.

3799. ——— ——— (several). (Staphylinidæ.)

Locality: Florissant, Colo. Horizon: Oligocene.

1881. Scudder. Bull. U. S. geol. surv. terr., vi: 291.
1883. " Ann. rep. U. S. geol. surv. terr., xii: 281.

3800. ——— ———. (Tenebrionidæ-Helopini.)

Locality: Dorset, England. Horizon: Middle Eocene, Bagshot series.

1870. Brodie. Geol. mag., vii: 141.

3801. ——— ———. (Tenebrionidæ-Helopini.)

Locality: Corfe, England. Horizon: ———.

1874. Brodie. Distr. corr. foss. ins., 13.

3802. ——— ——— (several). (Tenebrionidæ.)

Locality: Florissant, Colo. Horizon: Oligocene.

1881. Scudder. Bull. U. S. geol. surv. terr., vi: 292.
1883. " Ann. rep. U. S. geol. surv. terr., xii: 282.

3803. ——— ———. (Tenebrionidæ-Helopini.)

Locality: Creech, near Corfe, England. Horizon: ———.

1854. Westwood. Quart. journ. geol. soc. Lond., x: 381–382.

Abax parallela. See Feronia (Abax) parallela.

Abax vetustus. See Pterostichus (Abax) vetustus.

3804. Acalles icarus. (Curculionidæ.)

Locality: Rott, Rhenish Prussia. **Horizon:** Aquitanian.

1866. Heyd.-Heyd. Palaeontogr., xv: 152. *Pl.* 24, *fig.* 6.
1866. “ Käfer u. polypen, 22. *Pl.* 3, *fig.* 6.

3805. Acanthoderes lepidus. (Cerambycidæ.)

Locality: Oeningen, Baden. **Horizon:** Tortonian.

1865. Heer. Urwelt der Schweiz, 362 (Acanthoderus).
1872. “ Monde prim. Suisse, 444 (Acanthoderus).
1876. “ Prim. world Switz., ii: 16 (Acanthoderus).
1879. “ Urwelt der Schweiz, 2^e aufl., 387 (Acanthoderus).

3806. Acanthoderes phrixi. (Cerambycidæ.)

Locality: Radoboj, Croatia. **Horizon:** Mayencian.

1847. Heer. Insektenf. tertiärg. Oeningen, i: 167–168. *Pl.* 5, *fig.* 13.
1852. Giebel. Deutschl. petref., 649.
1856. “ Insect. d. vorwelt, 130.

3807. Acanthoderes sepultus. (Cerambycidæ.)

Locality: Oeningen, Baden. **Horizon:** Tortonian.

1865. Heer. Urwelt der Schweiz, 362, 375 (Acanthoderus).
1872. “ Monde prim. Suisse, 444, 461 (Acanthoderus).
1876. “ Prim. world Switz., ii: 16, 31 (Acanthoderus).
1879. “ Urwelt der Schweiz, 2^e aufl., 387, 401 (Acanthoderus).

Acanthoderus lepidus. See Acanthoderes lepidus.

Acanthoderus sepultus. See Acanthoderes sepultus.

3808. Achenium ingens. (Staphylinidæ.)

Locality: Aix, France. **Horizon:** Ligurian.

1874. Oustalet. Ann. sc. géol., v, art. 2: 142–143. *Pl.* 2, *fig.* 18.

3809. Acmæodera antholitha. (Buprestidæ.)

Locality: Oeningen, Baden. **Horizon:** Tortonian.

1862. Heer. Verhandl. holl. maatsch. wetensch., xvi: 89. *Pl.* 7, *fig.* 23.

3810. Acmæodera brevicollis. (Buprestidæ.)

Locality: Oeningen, Baden. **Horizon:** Tortonian.

1862. Heer. Verhandl. holl. maatsch. wetensch., xvi: 89. *Pl.* 7, *fig.* 22.

3811. Adalia ——. (Coccinellidæ.)

Locality: Brunstatt, Alsatia. **Horizon:** Middle Oligocene.

1890. Foerster. In litt.

3812. Adelocera granulata. (Elateridæ.)

Locality: (Oeningen ?, Baden). **Horizon:** Tortonian.

1847. Heer. Insektenf. tertiärg. Oeningen, i: 139–140. *Pl.* 8, *fig.* 7.
1852. Giebel. Deutschl. petref., 651.
1856. “ Insect. d. vorwelt, 96–97.

3813. Adimonia ? ——. (Chrysomelidæ.)

Locality: Jarville, France. **Horizon:** Pleistocene.

1875. Fliche. Comptes rendus, lxxx: 1234.

3814. Ægialia rupta. (Scarabæidæ.)

Locality: Green River, Wyo. Horizon: Oligocene.

1890. Scudder. Tert. ins. N. A., 489. *Pl.* 8, *fig.* 19.

3815. Agabus ——. (Dytiscidæ.)

Locality: Hösbach, Bavaria. Horizon: Lower Pleistocene.

1884. Flach. Käfer unterpleist. Hösbach, 8.
1884. " Verhandl. physik.-med. gesellsch. Wurzb., n. f., xviii: 292.

3816. Agabus ? ——. (Dytiscidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1856. Menge. Progr. petrischule Danzig, 1856: 23.

3817. Agabus bipunctatus (recent). (Dytiscidæ.)

Locality: Cambridge, England. Horizon: Peat beds.

[1787. Fabricius. Mant. ins., 190.]
1888. Bell. Entom., xxi: 2.
See also Agabus nebulosus.

3818. Agabus nebulosus (recent). (Dytiscidæ.)

Locality: Cambridge, England. Horizon: Peat beds.

[1781. Forster. Nov. spec. ins., 56.]
See also Agabus bipunctatus.

3819. Agabus reductus. (Dytiscidæ.)

Locality: Rott, Rhenish Prussia. Horizon: Aquitanian.

1866. Heyd.-Heyd. Palaeontogr., xv: 135. *Pl.* 22, *fig.* 4.
1866. " Käfer u. polypen, 5. *Pl.* 1, *fig.* 4.

3820. Agatoides carinulatus. (Carabidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1856. Motschulsky. Études entom., v: 26.

3821. Agelasa ——. (Chrysomelidæ.)

Locality: Brunstatt, Alsatia. Horizon: Middle Oligocene.

1890. Foerster. In litt.

3822. Agonum gracile (recent). (Carabidæ.)

Locality: Jarville, France. Horizon: Pleistocene.

[1824. Sturm. Ins., v: 197. *Pl.* 136, *fig. A.*]
1875. Fliche. Comptes rendus, lxxx: 1234.

3823. Agonum sismondæ. (Carabidæ.)

Locality: La Boisse, France. Horizon: Quaternary.

1876. Mortillet. MSS.
1876. Lart.-Chantre. Arch. mus. hist. nat. Lyon, i: 104.

3824. Agrilus ——. (Buprestidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1845. Berendt. Bernst. befindl. organ. reste vorw., i; 56.

3825. Agrilus ——. (Buprestidæ.)

Locality: Creech, England. Horizon: Corfe clay.
1854. **Westwood.** Proc. geol. soc. Lond. 381, 395. *Pl.* 16, *fig.* 34.

3826. Agrilus baueri. (Buprestidæ.)

Compared with A. biguttatus Fabr.
Locality: Rott, Rhenish Prussia. Horizon: Aquitanian.
1862. **Heyden.** Palaeontogr., x: 68–69. *Pl.* 10, *fig.* 21.

3827. Akulosamphus montanus. (Curculionidæ.)

Locality: Le Puy, France. Horizon: ——.
1854. **Aymard.** Congr. scient. France, sess. xxii: 42 (undescr.).

Alaus spectabilis. See Elater (Alaus) spectabilis.

3828. Aleochara ——. (Staphylinidæ.)

Locality: Prussian amber. Horizon: Ligurian.
1835. **Gravenhorst.** Uebers. schles. gesellsch. vaterl. cult., 1834: 92.

3829. Amara —— (2 sp.). (Carabidæ).

Locality: Brunstatt, Alsatia. Horizon: Middle Oligocene.
1890. **Foerster.** In litt.

3830. Amara aulica (recent). (Carabidæ.)

Locality: Hösbach, Bavaria. Horizon: Lower Pleistocene.
[1797. **Panzer.** Faun. germ., xxxviii: 3.]
1884. **Flach.** Käfer unterpleist. Hösbach, 6. *Pl.* 1, *fig.* 9.
1884. “ Verhandl. physik.-med. gesellsch. Würzb., n. f., xviii: 290. *Pl.* 8, *fig.* 9.

3831. Amara famelica (recent). (Carabidæ.)

Locality: Hösbach, Bavaria. Horizon: Lower Pleistocene.
[1831?. **Zimmermann.** Mon. Carab. i: 36.]
1884. **Flach.** Käfer unterpleist. Hösbach, 6–7. *Pl.* 1, *fig.* 10.
1884. “ Verhandl. physik.-med. gesellsch. Würzb., n. f., xviii: 290–291. *Pl.* 8, *fig.* 10.

3832. Amara familiaris (recent). (Carabidæ.)

Locality: Hochheim, Germany. Horizon: Kalkmergel.
[1812. **Duftschmid.** Faun. austr., ii: 119 (Carabus?).]
1840. **Meyer.** Ersch u. Grüber, Allg. encycl. d. wissensch., sect. 2, th. xviii: 539.

3833. Amara pinguicula. (Carabidæ.)

Locality: Oeningen, Baden. Horizon: Tortonian.
1862. **Heer.** Verhandl. holl. maatsch. wetensch., xvi: 26. *Pl.* 1, *figs.* 14, 15.

3834. Amara primigenia. (Carabidæ.)

Locality: Oeningen, Baden. Horizon: Tortonian.
1862. **Heer.** Verhandl. holl. maatsch. wetensch., xvi: 25–26. *Pl.* 1, *figs.* 12, 12*b*.

3835. Amara princeps. (Carabidæ.)

Locality: Oeningen, Baden. Horizon: Tortonian.

1862.	Heer.	Verhandl. holl. maatsch. wetensch., xvi: 24–25. *Pl.* 1, *figs.* 13, 13*b–c*.
1865.	"	Urwelt der Schweiz. *Fig.* 285 on *p.* 384.
1872.	"	Monde prim. Suisse. *Fig.* 285 on *p.* 471.
1876.	"	Prim. world Switz., ii. *Fig.* 285 on *p.* 42.
1879.	"	Urwelt der Schweiz, 2^{e} aufl. *Fig.* 327 on *p.* 410.

3836. Ammœcius ———. (Scarabæidæ.)

Locality: Brunstatt, Alsatia. Horizon: Middle Oligocene.

1889.	Foerster.	Mitth. comm. geol. Elsass-Lothr., ii: 102.

3837. Ampedus seyfriedii. (Elateridæ.)

Locality: Oeningen, Baden. Horizon: Tortonian.

1847.	Heer.	Insektenf. tertiärg. Oeningen, i: 131–133. *Pl.* 4, *fig.* 2.
1852.	Giebel.	Deutschl. petref., 651.
1856.	"	Insect. d. vorwelt, 98.
1865.	Heer.	Urwelt der Schweiz, 362.
1872.	"	Monde prim. Suisse, 444.
1876.	"	Prim. world Switz., ii: 16.
1879.	"	Urwelt der Schweiz, 2^{e} aufl., 387.

3838. Amphotis bella. (Nitidulidæ.)

Locality: Radoboj, Croatia. Horizon: Mayencian.

1847.	Heer.	Insektenf. tertiärg. Oeningen, i: 38–39. *Pl.* 7, *fig.* 22.
1852.	Giebel.	Deutschl. petref., 654.
1856.	"	Insect. d. vorwelt, 44.

3839. Amphotis œningensis. (Nitidulidæ.)

Locality: Oeningen, Baden. Horizon: Tortonian.

1862.	Heer.	Verhandl. holl. maatsch. wetensch., xvi: 53. *Pl.* 3, *fig.* 31.

3840. Anaspis ———. (Pythidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1845.	Berendt.	Bernst. befindl. organ. reste vorw., i: 56.

3841. Anaspis antica. (Pythidæ.)

Locality: Sicilian amber. Horizon: ———.

1838.	Guérin.	Rev. zool., 1838: 170 (undescr.).

3842. Anchomenus ———. (Carabidæ.)

Locality: Brunstatt, Alsatia. Horizon: Middle Oligocene

1888.	Foerster.	Mitth. comm. geol. Elsass-Lothr., i: 165.

3843. Anchomenus ———. (Carabidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1856.	Menge.	Progr. petrischule Danzig, 1856: 23.

3844. Anchomenus orphanus. (Carabidæ.)

Locality: Radoboj, Croatia. Horizon: Mayencian.

1847.	Heer.	Insektenf. tertiärg. Oeningen, i: 21–22. *Pl.* 1, *fig.* 4.
1852.	Giebel.	Deutschl. petref., 655.
1856.	"	Insect. d. vorwelt, 66.

3845. Ancylocheira alemanica. (Buprestidæ.)

Locality: Oeningen, Baden. Horizon: Tortonian.

1879. Heer. Urwelt der Schweiz, 2e aufl., 384. *Figs.* 258*ab*.

3846. Ancylocheira concinna. (Buprestidæ.)

Compared with A. octoguttata Fabr.

Locality: Oeningen, Baden. Horizon: Tortonian.

1879. Heer. Urwelt der Schweiz, 2e aufl., 387, 403. *Fig.* 259 on *p.* 384.

3847. Ancylocheira deleta. (Buprestidæ.)

Localities: Oeningen, Baden; Monte Bolca, Italy. Horizons: Tortonian, Ligurian.

1847. Heer. Insektenf. tertiärg. Oeningen, i: 108 (Ancylochira). *Pl.* 3, *fig.* 6.
1852. Giebel. Deutschl. petref., 652.
1855. Massalongo. Monogr. nereid. foss., 31 ("Comp. faun. foss. bolc., *pl.* 10, *figs.* 5–7").
1856. " Stud. paleont., 14. *Pl.* 1, *figs.* 1–3.
1856. Giebel. Insect. d. vorwelt, 83–84.
1886. Omboni. Atti r. ist. Ven., (6), iv: 1425. *Pl.* 2, *figs.* 2–3.
1886. " Ins. foss. Ven., 5. *Pl.* 2, *figs.* 2–3.

3848. Ancylocheira gracilis. (Buprestidæ.)

Locality: Oeningen, Baden. Horizon: Tortonian.

1847. Heer. Insektenf. tertiärg. Oeningen, i: 111–112 (Ancylochira). *Pl.* 3, *fig.* 9.
1852. Giebel. Deutschl. petref., 652.
1856. " Insect. d. vorwelt, 84.

3849. Ancylocheira heydenii. (Buprestidæ.)

Locality: Oeningen, Baden. Horizon: Tortonian.

1847. Heer. Insektenf. tertiärg. Oeningen, i: 106–108 (Ancylochira). *Pl.* 3, *fig.* 5.
1852. Giebel. Deutschl. petref., 652.
1856. " Insect. d. vorwelt, 83.

3850. Ancylocheira pristina. (Buprestidæ.)

Locality: Rott, Rhenish Prussia. Horizon: Aquitanian.

1862. Heyden. Palaeontogr., x: 68 (Ancylochira.)

3851. Ancylocheira redempta. (Buprestidæ.)

Locality: Rott, Rhenish Prussia. Horizon: Aquitanian.

1859. Heyden. Palaeontogr., viii: 4 (Ancylochira). *Pl.* 1, *fig.* 1.

3852. Ancylocheira rusticana. (Buprestidæ.)

Locality: Oeningen, Baden. Horizon: Tortonian.

1847. Heer. Insektenf. tertiärg. Oeningen, i: 109–110 (Ancylochira). *Pl.* 3, *fig.* 7.
1852. Giebel. Deutschl. petref., 652.
1856. " Insect. d. vorwelt, 84.

3853. Ancylocheira seyfriedii. (Buprestidæ.)

Locality: Oeningen, Baden. Horizon: Tortonian.

1847. Heer. Insektenf. tertiärg. Oeningen, i: 110–111 (Ancylochira). *Pl.* 3, *fig.* 8.
1852. Giebel. Deutschl. petref., 652.
1856. " Insect. d. vorwelt, 84.

3854. Ancylocheira tincta. (Buprestidæ.)

Compared with A. octoguttata Fabr.

Locality: Oeningen, Baden. Horizon: Tortonian.

1862. Heer. Verhandl. holl. maatsch. wetensch., xvi: 87 (Ancylochira). *Pl.* 7, *figs.* 19, 20.

1865. " Urwelt der Schweiz, 362, 378. *Fig.* 258.

1872. " Monde prim. Suisse, 444, 461. *Fig.* 258, on *p.* 463.

1876. " Prim. world Switz., ii: 16, 35. *Fig.* 258, on *p.* 34.

1879. " Urwelt der Schweiz, 2e aufl., 387, 403. *Fig.* 300, on *p.* 404.

Ancylochira (various species). See Ancylocheira, the same species.

3855. Anisorhynchus deletus. (Otiorhynchidæ.)

Compared with A. bajulus and A. hespericus.

Locality: Kutschlin, Bohemia. Horizon: Miocene.

1881. Deichmüller. Foss. ins. diatomeensch. Kutschlin, 21–22. *Pl.* 21, *fig.* 7.

1881. " Verhandl. leop.-carol. acad. naturf., xlii: 313–314. *Pl.* 21, *fig.* 7.

3856. Anisorhynchus effossus. (Otiorhynchidæ.)

Compared with A. bajulus, Europe.

Locality: Corent, France. Horizon: Aquitanian.

1870. Oustalet. Ann. sc. géol., ii, art 3: 72–73. *Pl.* 1, *fig.* 9.

3857. Anisotoma ———. (Silphidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1845. Berendt. Bernst. befindl. organ. reste vorw., i: 56.

3858. Anobium ———. (Ptinidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1845. Berendt. Bernst. befindl. organ. reste vorw., i: 56.

3859. Anobium ———. (Ptinidæ.)

Compared with A. pertinax and A. rufipes.

Locality: Prussian amber. Horizon: Ligurian.

1832. Burmeister. Handb. ent., i: 635.

1836. " Man. ent., 577.

3860. Anobium ———. (Ptinidæ.)

Locality: Gurnet Bay, Isle of Wight. Horizon: Bembridge Limestone.

1879. Woodward. Quart. journ. geol. soc. Lond., xxxv: 344.

1879. " Geol. mag., (n. s.), v: 89.

3861. Anobium? deceptum. (Ptinidæ.)

Locality: Green River, Wyo. Horizon: Oligocene

1878. Scudder. Bull. U. S. geol. surv. terr., iv: 763.

1890. " Tert. ins. N. A., 492. *Pl.* 8, *fig.* 18.

3862. Anobium lignitum. (Ptinidæ.)

Locality: Green River, Wyo. Horizon: Oligocene.

1878. Scudder. Bull. U. S. geol. surv. terr., iv: 763.

1890. " Tert. ins. N. A., 492–493. *Pl.* 8, *fig.* 24.

3863. Anobium ? ovale. (Ptinidæ.)

Compared with Endecatomus rugosus LeC.

Locality: Green River, Wyo. Horizon: Oligocene.

1878. Scudder. Bull. U. S. geol. surv., terr., iv: 762–763.
1890. " Tert. ins. N. A., 491–492. *Pl.* 8, *fig.* 1.

3864. Anomala fugax. (Scarabæidæ.)

Compared with A. julii F., Europe.

Locality: Oeningen, Baden. Horizon: Tortonian.

1862. Heer Verhandl. holl. maatsch. wetensch., xvi: 80. *Pl.* 6, *fig.* 23.
1865. " Urwelt der Schweiz, 380.
1872. " Monde prim. Suisse, 466.
1876. " Prim. world Switz., ii: 37.
1879. " Urwelt der Schweiz, 2e aufl., 406.

3865. Anomala primigenia. (Scarabæidæ.)

Locality: Rott, Rhenish Prussia. Horizon: Aquitanian.

1866. Heyd.-Heyd. Palaeontogr., xv: 140–141. *Pl.* 22, *figs.* 18, 19.
1866. " Käfer u. polypen, 10–11. *Pl.* 1, *figs.* 18, 19.

3866. Anomala thetis. (Scarabæidæ.)

Locality: Rott, Rhenish Prussia. Horizon: Aquitanian.

1866. Heyd.-Heyd. Palaeontogr., xv: 141. *Pl.* 24, *fig.* 12.
1866. " Käfer u. polypen, 11. *Pl.* 3, *fig.* 12.

3867. Anomala tumulata. (Scarabæidæ.)

Locality: Rott, Rhenish Prussia. Horizon: Aquitanian.

1866. Heyd.-Heyd. Palaeontogr., xv: 140. *Pl.* 23, *figs.* 18, 19.
1866. " Käfer u. polypen, 10. *Pl.* 2, *figs.* 18, 19.

3868. Anomalites fugitivus. (Scarabæidæ.)

Locality: Nogent le Rotrou, France. Horizon: ——.

1884. Frič. Sitzungsber. k. böhm. gesellsch. wiss., 1884: 163–165. *Fig.*

Anoplites bremii. See Anoplitis bremii.

3869. Anoplitis bremii. (Chrysomelidæ.)

Compared with Anoplitis quadrata F.

Locality: Oeningen, Baden. Horizon: Tortonian.

1847. Heer. Insektenf. tertiärg. Oeningen, i: 202–204 (Anoplites). *Pl.* 7, *fig.* 5; *pl.* 8, *fig.* 9.
1852. Giebel. Deutschl. petref., 648.
1856. " Insect. d. vorwelt, 115.
1865. Heer. Urwelt der Schweiz, 372. *Fig.* 241, on *p.* 371.
1872. " Monde prim. Suisse, 456. *Fig.* 241, on *p.* 455.
1876. " Prim. world Switz., ii: 28. *Fig.* 241, on *p.* 27.
1879. " Urwelt der Schweiz, 2e aufl., 398. *Fig.* 283, on *p.* 397.

3870. Anoplognathus rhenanus. (Scarabæidæ.)

Locality: Rott, Rhenish Prussia. Horizon: Aquitanian.

1862. Heyden. Palaeontogr., x: 65–66. *Pl.* 10, *fig.* 19.

3871. Anthaxia ——. (Buprestidæ.)

Locality: Brunstatt, Alsatia. Horizon: Middle Oligocene.

1885. Foerster. Tagebl. versamml. deutsch. naturf., lviii: 392.
1885. " Mitth. oberelsäss. tertiär., 7.
1888. " Mitth. comm. geol. Elsass-Lothr., i: 165.
1889. " Mitth. comm. geol. Elsass-Lothr., ii: 103.

3872. Anthaxia buschi. (Buprestidæ.)

Locality: Naumburg, Prussia. Horizon: Oligocene.

1869. Assmann. Beitr. ins. vorwelt, 61–62. *Figs.* 2*a*, *b*.
1869. " Zeitschr. f. ent. ver. schles. insektenk., ii, pt. i: 61–62. *Figs.* 2*a*, *b*.

3873. Anthaxia carbonaria. (Buprestidæ.)

Locality: Salzhausen, Germany. Horizon: Miocene.

1865. Heyd.-Heyd. Palaeontogr., xiv: 32. *Pl.* 9, *figs.* 15–16.

3874. Anthaxia crassicollis. (Buprestidæ.)

Locality: Oeningen, Baden. Horizon: Tortonian.

1862. Heer. Verhandl. holl. maatsch. wetensch., xvi: 88. *Pl.* 7, *fig.* 16.

3875. Anthaxia deleta. (Buprestidæ.)

Locality: Salzhausen, Germany. Horizon: Miocene.

1865. Heyd.-Heyd. Palaeontogr., xiv: 32.

3876. Anthaxia doris. (Buprestidæ.)

Locality: Oeningen, Baden. Horizon: Tortonian.

1862. Heer. Verhandl. holl. maatsch. wetensch., xvi: 88–89. *Pl.* 7, *fig.* 21.

3877. Anthaxia pallida. (Buprestidæ.)

Locality: Oeningen, Baden. Horizon: Tortonian.

1862. Heer. Verhandl. holl. maatsch. wetensch., xvi: 88. *Pl.* 7, *fig.* 25.

3878. Anthaxia primæva. (Buprestidæ.)

Locality: Salzhausen, Germany. Horizon: Miocene.

1865. Heyd.-Heyd. Palaeontogr., xiv: 32–33.

3879. Antherophagus priscus. (Cryptophagidæ.)

Compared with A. ochraceus.

Locality: Green River, Wyo. Horizon: Oligocene.

1876. Scudder. Bull. U. S. geol. surv. terr., ii: 79–80.
1878. " Bull. U. S. geol. surv. terr., iv: 762.
1885. " Zittel, Handb. palaeont., i, th. ii: 800. *Fig.* 1051.
1886. " Zittel-Barrois, Traité de paléont., ii: 800. *Fig.* 1068
1890. " Tert. ins. N. A., 501. *Pl.* 7, *figs.* 24, 35.

3880. Anthicus ——. (Anthicidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1845. Berendt. Bernst. befindl. organ. reste vorw., i: 56.

3881. Anthicus melancholicus. (Anthicidæ.)

Locality: Aix, France. Horizon: Ligurian.

1874. Oustalet. Ann. sc. géol., v, art. 2: 208–210 (Antichus). *Pl.* 5, *fig.* 12.

3882. Anthonomus defossus. (Curculionidæ.)

Compared with A. hæmatopus.

Locality: Florissant, Colo. Horizon: Oligocene.

1876. Scudder. Bull. U. S. geol. surv. terr., ii: 86.

3883. Anthonomus soporus. (Curculionidæ.)

Locality: Green River, Wyo. Horizon: Oligocene.

1890. Scudder. Tert. ins. N. A., 472–473. *Pl.* 8, *fig.* 16.

3884. Anthophagus ——. (Staphylinidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1845. Berendt. Bernst. befindl. organ. reste vorw., i: 56.

3885. Anthophagus giebeli. (Staphylinidæ.)

Locality: Rott, Rhenish Prussia. Horizon: Aquitanian.

1866. Heyd.-Heyd. Palaeontogr., xv: 138. *Pl.* 22, *fig.* 15.
1866. " Käfer u. polypen, 8. *Pl.* 1, *fig.* 15.

3886. Anthrenus ——. (Dermestidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1845. Berendt. Bernst. befindl. organ. reste vorw., i: 56.

3887. Anthribites moussonii. (Anthribidæ.)

Locality: Oeningen, Baden. Horizon: Tortonian.

1847. Heer. Insektenf. tertiärg. Oeningen, i: 177–178. *Pl.* 6, *fig.* 7.
1852. Giebel. Deutschl. petref., 649.
See also Anthribus moussoni.

3888. Anthribites pusillus. (Anthribidæ.)

Locality: Oeningen, Baden. Horizon: Tortonian.

1847. Heer. Insektenf. tertiärg. Oeningen, i: 178–179. *Pl.* 6, *fig.* 6.
1852. Giebel. Deutschl. petref., 649.
1856. " Insect. d. vorwelt, 135.

3889. Anthribites rechenbergi. (Anthribidæ.)

Locality: Zschipkau, Nieder Lausitz. Horizon: Braunkohl.

1888. Kolbe. Zeitschr. deutsch. geol. gesellsch., xl: 131–134. *Pl.* 11; *figs.* 1–3, 4*ab*.

3890. Anthribus ——. (Anthribidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1845. Berendt. Bernst. befindl. organ. reste vorw., i: 56.

3891. Anthribus moussoni. (Anthribidæ.)

Locality: Oeningen, Baden. Horizon: Tortonian.

1856. Giebel. Insect. d. vorwelt, 135.
See also Anthribites moussonii.

Antichus melancholicus. See Anthicus melancholicus.

3892. Antliarhinites gracilis. (Rhynchitidæ.)

Locality: Oeningen, Baden. Horizon: Tortonian.

1865. Heer. Urwelt der Schweiz, 374. *Fig.* 246, on *p.* 371.
1872. " Monde prim. Suisse, 458. *Fig.* 246, on *p.* 455.
1876. " Prim. world Switz., ii: 29. *Fig.* 246, on *p.* 27.
1879. " Urwelt der Schweiz, 2^{e} aufl., 399. *Fig.* 288, on *p.* 397.

3893. Apate ——. (Ptinidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1832. Burmeister. Handb. ent., i: 635.
1836. " Man. ent., 577.

3894. Apate ——. (Ptinidæ.)

Compared with A. capucina.

Locality: Aix, France. Horizon: Ligurian

1829. Serres. Géogn. terrains tert., 224.

3895. Apate ——. (Ptinidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1829. Serres. Géogn. terrains tert., 241.

3896. Aphodius ——. (Scarabæidæ.)

Compared with A. fimetarius Fabr.

Locality: Habichtswald, Germany. Horizon: "Polirschiefer."

1843. Landgrebe. Neues jahrb. f. min., 1843: 141–142.

3897. Aphodius antiquus. (Scarabæidæ.)

Locality: Oeningen, Baden. Horizon: Tortonian.

1847. Heer. Insektenf. tertiärg. Oeningen, i: 66–67. *Pl.* 7, *fig.* 28.
1852. Giebel. Deutschl. petref., 653.
1856. " Insect. d. vorwelt, 40.

3898. Aphodius brevipennis. (Scarabæidæ.)

Locality: Oeningen, Baden. Horizon: Tortonian.

1862. Heer. Verhandl. holl. maatsch. wetensch., xvi: 77–78. *Pl.* 6, *fig.* 21.

3899. Aphodius fossor (recent). (Scarabæidæ.)

Locality: Prussian amber. Horizon: Ligurian.

[1746. Linné. Faun. suec., 134.]
1838. Robert. Bull. soc. géol. France, ix: 114.

3900. Aphodius krantzi. (Scarabæidæ.)

Locality: Rott, Rhenish Prussia. Horizon: Aquitanian.

1866. Heyd.-Heyd. Palaeontogr., xv: 140. *Pl.* 22, *fig.* 24.
1866. " Käfer u. polypen, 10. *Pl.* 1, *fig.* 24.

3901. Aphodius meyeri. (Scarabæidæ.)

Locality: Oeningen, Baden. Horizon: Tortonian.

1847. Heer. Insektenf. tertiärg. Oeningen, i: 67. *Pl.* 7, *fig.* 27.
1852. Giebel. Deutschl. petref., 653.
1856. " Insect. d. vorwelt, 40.

3902. Aphodius præcursor. (Scarabæidæ.)

Locality: Port Kennedy, Pa. **Horizon:** Postpliocene.

1876. Horn. Trans. Amer. ent. soc., v: 245.
1889. Lesley. Dict. foss. Penns., i: p. v.
1890. Scudder. Tert. ins. N. A., 488–489. *Pl.* 1, *fig.* 11.

3903. Apion ——. (Curculionidæ.)

Locality: Prussian amber. **Horizon:** Ligurian.

1845. Berendt. Bernst. befindl. organ. reste vorw., i: 56.

3904. Apion ——. (Curculionidæ.)

Compared with A. trifolii.

Locality: Hösbach, Bavaria. **Horizon:** Lower Pleistocene.

1884. Flach. Käfer unterpleist. Hösbach, 10. *Pl.* 2, *fig.* 9.
1884. " Verhandl. physik.-med. gesellsch. Würzburg, n. f., xviii: 294 *Pl.* 2, *fig.* 9.

3905. Apion —— (2 sp.). (Curculionidæ.)

Locality: Brunstatt, Alsatia. **Horizon:** Middle Oligocene.

1889. Foerster. Mitth. comm. geol. Elsass-Lothr., ii: 102.

3906. Apion —— (4 sp.). (Curculionidæ.)

Locality: Brunstatt, Alsatia. **Horizon:** Middle Oligocene.

1890. Foerster. In litt.

3907. Apion ——. (Curculionidæ.)

Locality: Aix, France. **Horizon:** Ligurian.

1829. Serres. Géogn. terrains tert., 222, 267.

Apion ——. See —— —— (Carabidæ) Baily.

3908. Apion antiquum. (Curculionidæ.)

Locality: Oeningen, Baden. **Horizon:** Tortonian.

1865. Heer. Urwelt der Schweiz. *Fig.* 242, on *p.* 371.
1872. " Monde prim. Suisse. *Fig.* 242, on *p.* 455.
1876. " Prim. world Switz., ii. *Fig.* 242, on *p.* 27.
1879. " Urwelt der Schweiz, 2^e^ aufl. *Fig.* 284, on *p.* 397.

3909. Apion primigenius. (Curculionidæ.)

Locality: Aix, France. **Horizon:** Ligurian.

1874. Heer. MSS. in Oustalet.
See also Cœliodes primigenius.

3910. Apion primordiale. (Curculionidæ.)

Locality: Rott, Rhenish Prussia. **Horizon:** Aquitanian.

1866. Heyd-.Heyd. Palaeontogr., xv: 148. *Pl.* 23, *fig.* 9.
1866. " Käfer u. polypen, 18. *Pl.* 2, *fig.* 9.

Argutor ——. See Harpalus (Argutor or Ophonus) ——.

3911. Argutor antiquus. (Carabidæ.)

Locality: Oeningen, Baden. Horizon: Tortonian.

1847. Heer. Insektenf. tertiärg. Oeningen, i: 22-23. *Pl.* 1, *fig.* 5.
1852. Giebel. Deutschl. petref., 655.
See also Pterostichus antiquus.

Argutor diligens. See Feronia (Argutor) diligens.

Argutor minutulus. See Pterostichus (Argutor) minutulus.

3912. Argutor vernalis. (Carabidæ.)

Locality: Basel, Switzerland. Horizon: Interglacial.

1886. Scudder. Bull. U. S. geol. surv., No. 31: 84.
See also Pterostichus vernalis.

3913. Arthropterus kuhlii. (Paussidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1877. Stein. Mittheil. münch. entom. ver., i: 29.

3914. Asida ——. (Tenebrionidæ.)

Compared with A. grisea.

Locality: Aix, France. Horizon: Ligurian.

1829. Serres. Géogn. terrains tert., 222, 266-267.

3915. Astynomus tertiarius. (Cerambycidæ.)

Locality: Zschipkau, Nieder Lausitz. Horizon: Braunkohl.

1888. Kolbe. Zeitschr. deutsch. geol. gesellsch., xl: 134-135. *Pl.* 11, *figs.* 5, 6.

3916. Atomaria protogæa. (Cryptophagidæ.)

Locality: Oeningen, Baden. Horizon: Tortonian.

1862. Heer. Verhandl. holl. maatsch. wetensch., xvi: 53. *Pl.* 3, *figs.* 32, 32*b*.

3917. Atopa ——. (Dascyllidæ.)

Compared with A. cervina.

Locality: Aix, France. Horizon: Ligurian.

1847. Hope. Trans. ent. soc. Lond., iv: 251.

3918. Atopa cervina (recent). (Dascyllidæ.)

Locality: Cambridge, England. Horizon: Peat.

1888. Bell. Entom., xxi: 2.
See also Dascyllus cervinus.

3919. Atractocerus ——. (Lymexylidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1825. Guérin. Dict. class. d'hist. nat., viii: 580 (Atractocère).
1829. Serres. Géogn. terrains tert., 241.

3920. Attagenus extinctus. (Dermestidæ.)

Locality: Salzhausen, Germany. Horizon: Miocene.

1865. Heyd.-Heyd. Palaeontogr., xiv: 31-32. *Pl.* 9, *fig.* 14.
1885. Scudder. Zittel, Handb. palaeont., i, th. ii: 799. *Fig.* 1047.
1886. “ Zittel-Barrois, Traité de paléont., ii: 799. *Fig.* 1064.

3921. Attelabus ——. (Attelabidæ.)

Locality: Copal. Horizon: Recent.

1776. Bloch. Beschäft. berl. gesellsch. naturf. freunde, ii: 168–170. *Pl.* 3, *figs.* 7–8.

3922. Attelabus durus. (Attelabidæ.)

Locality: Oeningen, Baden. Horizon: Tortonian.

1865. Heer. Urwelt der Schweiz, 373. *Fig.* 244, on *p.* 371.
1872. " Monde prim. Suisse, 458. *Fig.* 244, on *p.* 455.
1876. " Prim. world Switz., ii: 29. *Fig.* 244, on *p.* 27.
1879. " Urwelt der Schweiz, 2ᵉ aufl., 399. *Fig.* 286, on *p.* 397.

3923. Badister debilis. (Carabidæ.)

Locality: (Oeningen ?, Baden). Horizon: Tortonian.

1847. Heer. Insektenf. tertiärg. Oeningen, i: 20–21. *Pl.* 8, *fig.* 1.
1852. Giebel. Deutschl. petref., 655.
1856. " Insect. d. vorwelt, 68.

3924. Badister fragilis. (Carabidæ.)

Locality: Oeningen, Baden. Horizon: Tortonian.

1862. Heer. Verhandl. holl. maatsch. wetensch., xvi: 21. *Pl.* 1, *figs.* 9, 10.

3925. Badister grandis. (Carabidæ.)

Locality: Oeningen, Baden. Horizon: Tortonian.

1862. Heer. Verhandl. holl. maatsch. wetensch., xvi: 19–20. *Pl.* 1, *figs.* 5, 5*b*, 6, 6*b*.

3926. Badister macrocephalus. (Carabidæ.)

Locality: Oeningen, Baden. Horizon: Tortonian.

1862. Heer. Verhandl. holl. maatsch. wetensch., xvi: 19. *Pl.* 1, *fig.* 8.
See also Badister macrocephalus var. major.

3927. Badister macrocephalus var. major. (Carabidæ.)

Locality: Oeningen, Baden. Horizon: Tortonian.

1862. Heer. Verhandl. holl. maatsch. wetensch., xvi: 19. *Pl.* 1, *fig.* 7.
See also Badister macrocephalus.

Badister major. See Badister macrocephalus var. major.

3928. Badister prodromus. (Carabidæ.)

Locality: (Oeningen ?, Baden). Horizon: Tortonian.

1847. Heer. Insektenf. tertiärg. Oeningen, i: 18–20. *Pl.* 1, *fig.* 3.
1852. Giebel. Deutschl. petref., 655.
1856. " Insect. d. vorwelt, 67–68.

3929. Bagous —— (2 sp.). (Curculionidæ.)

Locality: Brunstatt, Alsatia. Horizon: Middle Oligocene.

1890. Foerster. In litt.

3930. Bagous atavus. (Curculionidæ.)

Locality: Corent, France. Horizon: Aquitanian.

1870. Oustalet. Ann. sc. géol., ii, art. 3: 76. *Pl.* 1, *fig* 11.

3931. Balaninus barthelemyi. (Curculionidæ.)

Locality: Aix, France. Horizon: Ligurian.

1847.	Hope.	Trans. ent. soc. Lond., iv: 254. *Pl.* 19, *figs.* 1, 1*.
1856.	Giebel.	Insect. d. vorwelt, 147 (Barthelemy).
1874.	Oustalet.	Ann. sc. géol., v, art. 2: 294.

3932. Balaninus geinitzi. (Curculionidæ.)

Compared with B. apicalis.

Locality: Kutschlin, Bohemia. Horizon: Miocene.

1881.	Deichmüller.	Foss. ins. diatomeensch. Kutschlin, 22. *Pl.* 21, *figs.* 8, 8*a*.
1881.	“	Verhandl. leop.-carol. akad. naturf., xlii: 314. *Pl.* 21, *figs.* 8, 8*a*.

3933. Baridium ———. (Curculionidæ.)

Locality: Brunstatt, Alsatia. Horizon: Middle Oligocene.

1890.	Foerster.	In litt.

3934. Baris ———. (Curculionidæ.)

Locality: Aix, France. Horizon: Ligurian.

1854.	Pictet.	Traité de paléont., 2e éd., ii: 351 (fide Serres MSS.).

3935. Bembicidioides inæquicollis. (Staphylinidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1888.	Schaufuss.	Berl. ent. zeitschr., xxxii: 267–268.

3936. Bembidium ———. (Carabidæ.)

Locality: Jarville, France. Horizon: Pleistocene.

1875.	Fliche.	Comptes rendus, lxxx: 1234.

3937. Bembidium ———. (Carabidæ.)

Locality: Brunstatt, Alsatia. Horizon: Middle Oligocene.

1889.	Foerster.	Mitth. comm. geol. Elsass.-Lothr., ii: 103.

3938. Bembidium absolutum. (Carabidæ.)

Locality: Radoboj, Croatia. Horizon: Mayencian.

1856.	Giebel.	Insect. d. vorwelt, 64 (refers to “Heer, Insectenfauna i, tf. 10, fig. 91,” which does not exist, and moreover Heer describes no Bembidium from Radoboj, and Giebel's short description fits no Radoboj carabid figured by Heer).

3939. Bembidium assimile (recent). (Carabidæ.)

Locality: Hösbach, Bavaria. Horizon: Lower Pleistocene.

[1810.	Gyllenhal.	Ins. suec., ii: 26.]
1884.	Flach.	Käfer unterpleist. Hösbach, 7. *Pl.* 1, *fig.* 12.
1884.	“	Verhandl. physik.-med. gesellsch. Würzburg, n. f., xviii: 291. *Pl.* 8, *fig.* 12.

3940. Bembidium exoletum. (Carabidæ.)

Compared with B. inæquale

Locality: White River, Colo. or Utah. Horizon: Oligocene.

1876.	Scudder.	Bull. U. S. geol. surv. terr., ii: 77–78.
1877.	“	Bull. U. S. geol. surv. terr., iii: 759.
1890.	“	Tert. ins. N. A., 530–531. *Pl.* 5, *figs.* 121, 122.

3941. Bembidium fragmentum. (Carabidæ.)

Compared with B. constrictum Say.
Locality: Scarboro', Ontario. Horizon: Postpliocene.
1890. Scudder. Tert. ins. N. A., 531–532. *Pl.* 1, *fig.* 45.

3942. Bembidium glaciatum. (Carabidæ.)

Compared with B. longulum LeC.
Locality: Scarboro', Ontario. Horizon: Postpliocene.
1890. Scudder. Tert. ins. N. A., 531. *Pl.* 1, *fig.* 40.

3943. Bembidium infernum. (Carabidæ.)

Locality: Aix, France. Horizon: Ligurian.
1856. Heer. Viert. naturf. gesellsch. Zürich, i: 14. *Pl*, 1, *fig.* 1.
1874. Oustalet. Ann. sc. géol., v, art. 2: 98. *Pl.* 6, *fig.* 12.

3944. Bembidium nitidulum (recent). (Carabidæ.)

Locality: Jarville, France. Horizon: Pleistocene.
[1802. Marshall. Ent. brit., 454.]
1875. Fliche. Comptes rendus, lxxx: 1234.
1886. Scudder. Bull. U. S. geol. surv., No. 31: 84.

3945. Bembidium obtusum (recent). (Carabidæ.)

Locality: Jarville, France. Horizon: Pleistocene.
[1825. Sturm. Ins., vi: 165. *Pl.* 161, *figs. c, C.*]
1875. Fliche. Comptes rendus, lxxx: 1234.
1886. Scudder. Bull. U. S. geol. surv., No. 31: 84.

3946. Bembidium saportanum. (Carabidæ.)

Locality: Aix, France. Horizon: Ligurian.
1874. Heer. MSS.
1874. Oustalet. Ann. sc. géol., v, art. 2: 98–100. *Pl.* 1, *fig.* 7.

3947. Bembidium succini. (Carabidæ.)

Locality: Prussian amber. Horizon: Ligurian.
1856. Giebel. Insect. d. vorwelt, 64.

3948. Berosus sexstriatus. (Hydrophilidæ.)

Compared with B. punctipennis Chevr. (MSS.), Mexico.
Locality: Green River, Wyo. Horizon: Oligocene.
1878. Scudder. Bull. U. S. geol. surv. terr., iv: 760–761.
1890. " Tert. ins. N. A., 513–514. *Pl.* 7, *fig.* 40.

3949. Berosus tenuis. (Hydrophilidæ.)

Compared with B. cuspidatus Chevr., Mexico.
Locality: Green River, Wyo. Horizon: Oligocene.
1878. Scudder. Bull. U. S. geol. surv. terr., iv: 760.
1890. " Tert. ins. N. A., 514. *Pl.* 8, *fig.* 8.

3950. Bledius ———. (Staphylinidæ.)

Locality: Prussian amber. Horizon: Ligurian.
1856. Menge. Progr. petrischule Danzig, 1856: 23.

3951. Bledius adamus. (Staphylinidæ.)

Compared with B. annularis LeC.

Locality: Green River, Wyo. Horizon: Oligocene.

1878. Scudder. Bull. U. S. geol. surv. terr., iv: 762.
1890. " Tert. ins. N. A., 504. *Pl.* 8, *fig.* 10.

3952. Bledius glaciatus. (Staphylinidæ.)

Compared with B. brevidens LeC.

Locality: Scarboro', Ontario. Horizon: Postpliocene.

1890. Scudder. Tert. ins. N. A., 505. *Pl.* 1, *fig.* 35.

3953. Bledius speciosus. (Staphylinidæ.)

Locality: Oeningen, Baden. Horizon: Tortonian.

1862. Heer. Verhandl. holl. maatsch. wetensch., xvi: 46–47. *Pl.* 3, *fig.* 2.
1865. " Urwelt der Schweiz, 383. *Fig.* 278, on *p.* 381.
1872. " Monde prim. Suisse, 469. *Fig.* 278, on *p.* 467.
1876. " Prim. world Switz., ii: 40. *Fig.* 278, on *p.* 38.
1879. " Urwelt der Schweiz, 2^e aufl., 408. *Fig.* 320, on *p.* 407.

3954. Bolboceras tertiarium. (Scarabæidæ.)

Locality: Kutschlin, Bohemia. Horizon: Miocene.

1881. Deichmüller. Foss. ins. diatomeensch. Kutschlin, 12–14. *Pl.* 21, *figs.* 2, 2*ab*.
1881. " Verhandl. leop.-carol. akad. naturf., xlii: 304–306. *Pl.* 21, *figs.* 2, 2*ab*.

Boletophagus ——. See Bolitophagus ——.

3955. Bolitophagus ——. (Tenebrionidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1845. Berendt. Bernst. befindl. organ. reste vorw., i: 56 (Boletophagus).

3956. Bolitophagus vetustus. (Tenebrionidæ.)

Locality: Rott, Rhenish Prussia. Horizon: Aquitanian.

1866. Heyd.-Heyd. Palaeontogr., xv: 145. *Pl.* 22, *fig.* 23.
1866. " Käfer u. polypen, 15. *Pl.* 1, *fig.* 23.

Bostrichus ——. See Bostrychus —— Hope, Menge.

3957. Bostrychus ——. (Ptinidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1832. Burmeister. Handb. ent., i: 635.
1836. " Man. ent., 577.

3958. Bostrychus ——. (Ptinidæ.)

Locality: Aix, France. Horizon: Ligurian.

1847. Hope. Trans. ent. soc. Lond., iv: 251 (Bostrichus).

3959. Bostrychus —— (larva). (Ptinidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1856. Menge. Progr. petrischule Danzig, 1856: 23 (Bostrichus).

3960. Bothrideres kunowi. (Colydiidæ.)

Compared with B. vittatus, Australia.

Locality: Prussian amber. Horizon: Ligurian.

1881. Stein. Berl. entom. zeitschr., xxv: 221.

3961. Bothrideres succinicola. (Colydiidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1881. Stein. Berl. entom. zeitschr., xxv: 221.

Brachinus primordialis. See Brachynus primordialis.

3962. Brachycerus ——. (Byrsopidæ.)

Compared with B. algirus.

Locality: Aix, France. Horizon: Ligurian.

1829. Serres. Géogn. terrains tert. 223.

3963. Brachycerus ——. (Byrsopidæ.)

Compared with B. hispanicus.

Locality: Aix, France. Horizon: Ligurian.

1829. Serres. Géogn. terrains tert., 223.
1874. Oustalet. Ann. sc. géol., v, art. 2: 211 (= Hipporhinus heeri?).
See also Hipporhinus heeri.

3964. Brachycerus ——. (Byrsopidæ.)

Compared with B. undatus.

Locality: Aix, France. Horizon: Ligurian.

1829. Serres. Géogn. terrains tert., 223, 272 (Brachyurus). *Pl.* 5, *fig.* 8.

3965. Brachycerus exilis. (Byrsopidæ.)

Locality: Aix, France. Horizon: Ligurian.

1837. Germar. Fauna insect. Europæ, xix: 11. *Pl.* 11.
1856. Giebel. Insect. d. vorwelt, 137.
1874. Oustalet. Ann. sc. géol., v, art. 2: 211 (= Phytom. annosus?).
See also Phytonomus annosus.

3966. Brachycerus germanus. (Byrsopidæ.)

Locality: Oeningen, Baden. Horizon: Tortonian.

1847. Heer. Insektenf. tertiärg. Oeningen, i: 180–182. *Pl.* 6, *fig.* 9.
1852. Giebel. Deutschl. petref., 649.
1856. " Insect. d. vorwelt, 136–137.

3967. Brachycerus lecoquii. (Byrsopidæ.)

Locality: Gergovia, France. Horizon: Aquitanian.

1870. Oustalet. Ann. sc. géol., ii, art. 3: 65. *Pl.* 1, *fig.* 4.

3968. Brachycerus nanus. (Byrsopidæ.)

Locality: Oeningen, Baden. Horizon: Tortonian.

1865. Heer. Urwelt der Schweiz. *Fig.* 247, on *p.* 371.
1872. " Monde prim. Suisse. *Fig.* 247, on *p.* 455.
1876. " Prim. world Switz., ii. *Fig.* 247, on *p.* 27.
1879. " Urwelt der Schweiz, 2e aufl. *Fig.* 289, on *p.* 397.

3969. Brachyderes aquisextanus. (Otiorhynchidæ.)

Locality: Aix, France. **Horizon**: Ligurian.

1874. Oustalet. Ann. sc. géol., v, art. 2: 242–245. *Pl.* 3, *figs.* 12, 12*a*.

3970. Brachyderes longipes. (Otiorhynchidæ.)

Locality: Aix, France. **Horizon**: Ligurian.

1874. Oustalet. Ann. sc. géol., v, art. 2: 235–242. *Pl.* 3, *figs.* 22, 23.
See also Hipporhinus longipes, Cleonus ——— Heer.

3971. Brachymycterus curculionoides. (Byrsopidæ.)

Locality: Rott, Rhenish Prussia. **Horizon**: Aquitanian.

1866. Heyd.-Heyd. Palaeontogr. xv: 148–149. *Pl.* 23, *figs.* 13–15.
1866. " Käfer u. polypen, 18–19. *Pl.* 2, *figs.* 13–15.
1870. L. Heyden. Foss dipt. Rott, 29.
1870. " Palaeontogr., xvii: 265.

3972. Brachynus primordialis. (Carabidæ.)

Locality: Oeningen, Baden. **Horizon**: Tortonian.

1847. Heer. Insektenf. tertiärg. Oeningen, i: 16 (Brachinus). *Pl.* 7, *fig.* 13.
1852. Giebel. Deutschl. petref., 655.
1856. " Insect. d. vorwelt, 70.

3973. Brachytarsus pristinus. (Anthribidæ.)

Locality: Green River, Wyo. **Horizon**: Oligocene.

1876. Scudder. Bull. U. S. geol. surv. terr., ii: 87.
1878. " Bull. U. S. geol. surv. terr., iv: 769.
1890. " Tert. ins. N. A., 466. *Pl.* 7, *fig.* 26.

Brachyurus ———. See Brachycerus ——— Serres.

3974. Bruchus ———. (Bruchidæ.)

Locality: Brunstatt, Alsatia. **Horizon**: Middle Oligocene.

1889. Foerster. Mitth. comm. geol. Elsass-Lothr., ii: 102.

3975. Bruchus ——— (2 sp.). (Bruchidæ.)

Locality: Brunstatt, Alsatia. **Horizon**: Middle Oligocene.

1890. Foerster. In litt.

3976. Bruchus ———. (Bruchidæ.)

Locality: Aix, France. **Horizon**: Ligurian.

1829. Serres. Géogn. terrains tert., 222.

3977. Bruchus anilis. (Bruchidæ.)

Locality: White River, Colo. **Horizon**: Oligocene.

1876. Scudder. Bull. U. S. geol. surv. terr., ii: 82.
1877. " Bull. U. S. geol. surv. terr., iii: 759.
1890. " Tert. ins. N. A., 484. *Pl.* 5, *fig.* 125.

3978. Bruchus bituminosus. (Bruchidæ.)

Locality: Arzburg, Germany. **Horizon**: Miocene?.

1837. Germar. Fauna insect. Europæ, xix: 10. *Pl.* 10.
1840. ———. Verz. samml. Bayr., 71.
1856. Giebel. Insect. d. vorwelt, 133.

3979. Bruchus decrepitus. (Bruchidæ.)

Locality: Sieblos, Rhenish Prussia. Horizon: Aquitanian.

1858.	Heyden.	Palaeontogr., v: 116. *Pl.* 23, *fig.* 13.

3980. Bruchus striolatus. (Bruchidæ.)

Locality: Oeningen, Baden. Horizon: Tortonian.

1847.	Heer.	Insektenf. tertiärg. Oeningen, i: 174–176. *Pl.* 6, *fig.* 5.
1852.	Giebel.	Deutschl. petref., 649.
1856.	"	Insect. d. vorwelt, 133–134.
1865.	Heer.	Urwelt der Schweiz, 374.
1872.	"	Monde prim. Suisse, 458.
1876.	"	Prim. world Switz., ii: 29.
1879.	"	Urwelt der Schweiz, 2e aufl., 399.

3981. Bryaxis ———. (Pselaphidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1845.	Berendt.	Bernst. befindl. organ. reste vorw., i: 56.

3982. Buprestis ———. (Buprestidæ.)

Locality: Lexden, England. Horizon: Pleistocene.

1888.	Bell.	Entom., xxi: 2.

3983. Buprestis ———. (Buprestidæ.)

Locality: Rhine, Germany. Horizon: Aquitanian ?.

1831.	Goldfuss.	Verhandl. leop.-carol. akad. naturf., vii, th. i: 118.

3984. Buprestis ——— (larva). (Buprestidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1856.	Menge.	Progr. petrischule Danzig, 1856: 23.

3985. Buprestis ———. (Buprestidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1838.	Robert.	Bull. soc. géol. France, ix: 114.

3986. Buprestis ———. (Buprestidæ.)

Compared with B. nana.

Locality: Aix, France. Horizon: Ligurian.

1829.	Serres.	Géogn. terrains tert., 221.

3987. Buprestis alutacea. (Buprestidæ.)

Compared with B. marianæ.

Locality: Vic. Bonn, Rhenish Prussia. Horizon: Aquitanian.

1837.	Germar.	Fauna insect. Europæ, xix: 3. *Pl.* 3.
1852.	Giebel.	Deutschl. petref., 651.
1856.	"	Insect. d. vorwelt, 79.

See also Buprestites alutacea.

3988. **Buprestis carbonum.** (Buprestidæ.)

Compared with B. mœsta.

Localities: Bonn, Baireuth, Rhenish Prussia. Horizon: Aquitanian.

1837. Germar. Isis., 1837 : 423 (undescr.).
1837. " Fauna insect. Europæ, xix: 4. *Pl.* 4.
1840. ——. Verz. samml. Bayr., 71.
1852. Giebel. Deutschl. petref., 651.

See also Dicerca carbonum, Buprestites carbonum.

3989. **Buprestis major.** (Buprestidæ.)

Compared with B. cariosæ.

Locality: Vicinity Bonn, Rhenish Prussia. Horizon: Aquitanian.

1837. Germar. Fauna insect. Europæ, xix: 2. *Pl.* 2.
1847. Heer. Insektenf. tertiärg. Oeningen, i: 102.
1852. Giebel. Deutschl. petref., 651.
1856. " Insect. d. vorwelt, 78-79.

See also Buprestites major.

3990. **Buprestis meyeri.** (Buprestidæ.)

Locality: Sieblos, Rhenish Prussia. Horizon: Aquitanian.

1858. Heyden. Palaeontogr., v: 115. *Pl.* 23, *fig.* 11.

3991. **Buprestis minnæ.** (Buprestidæ.)

Locality: Schwarze Minna, vicinity Eisleben, Saxony. Horizon: ——.

1856. Giebel. Insect. d. vorwelt, 79.

See also Buprestites minnæ.

3992. **Buprestis saxigena.** (Buprestidæ.)

Locality: Nicola River, British Columbia. Horizon: ——.

1879. Scudder. Rep. progr. geol. surv. Can., 1877-'78: B 181.
1879. " Insect. tert. Nicola, 6.
1890. " Tert. ins. N. A., 494-495. *Pl.* 2, *figs.* 24, 25.

3993. **Buprestis senecta.** (Buprestidæ.)

Locality: Sieblos, Rhenish Prussia. Horizon: Aquitanian.

1858. Heyden. Palaeontogr., v: 116. *Pl.* 23, *fig.* 12.

3994. **Buprestis sepulta.** (Buprestidæ.)

Locality: Nicola River, British Columbia. Horizon: ——.

1879. Scudder. Rep. progr. geol. surv. Can., 1877-'78: B 181.
1879. " Insect. tert. Nicola, 6.
1890. " Tert. ins. N. A., 495. *Pl.* 2, *fig.* 26.

3995. **Buprestis tertiaria.** (Buprestidæ.)

Locality: Nicola River, British Columbia. Horizon: ——.

1879. Scudder. Rep. progr. geol. surv. Can., 1877-'78: B 180-181.
1879. " Insect. tert. Nicola, 5-6.
1890. " Tert. ins. N. A., 493-494. *Pl.* 2, *fig.* 23.

3996. **Buprestis tradita.** (Buprestidæ.)

Locality: Rott, Rhenish Prussia. Horizon: Aquitanian.

1859. Heyden. Palaeontogr., viii: 3. *Pl.* 2, *fig.* 9.

3997. Buprestis xylographica. (Buprestidæ.)

Locality: Stösschen, vicinity Linz, Austria. Horizon: Miocene.

1849. Germar. Zeitschr. deutsch. geol. gesellsch., i: 55–57. *Pl.* 2, *fig.* 1.
1852. Giebel. Deutschl. petref., 651.
See also Chrysobothris xylographica, Buprestites xylographica.

3998. Buprestites agriloides (1). (Buprestidæ.)

Distinct from the next.

Locality: Oeningen, Baden. Horizon: Tortonian.

1862. Heer. Verhandl. holl. maatsch. wetensch., xvi: 90. *Pl.* 7, *fig.* 24.

3999. Buprestites agriloides (2). (Buprestidæ.)

Distinct from the preceding.

Locality: Haseninsel, Greenland. Horizon: ———.

1883. Heer. Flora foss. grönl., ii: 144. *Pl.* 109, *figs.* 11, 11*b*.

4000. Buprestites alutacea. (Buprestidæ.)

Locality: Bonn, Rhenish Prussia. Horizon: Aquitanian.

1852. Giebel. Deutschl. petref., 651.
See also Buprestis alutacea.

4001. Buprestites carbonum. (Buprestidæ.)

Locality: Bonn, Rhenish Prussia. Horizon: Aquitanian.

1852. Giebel. Deutschl. petref., 651.
See also Buprestis carbonum, etc.

4002. Buprestites debilis. (Buprestidæ.)

Locality: Sieblos, Rhenish Prussia. Horizon: Aquitanian.

1860. Heer. Hassencamp, Würzb. naturwiss. zeitschr, i: 79 (undescr.).

4003. Buprestites exstinctus. (Buprestidæ.)

Locality: (Oeningen?, Baden). Horizon: Tortonian.

1847. Heer. Insektenf. tertiärg. Oeningen, i: 129–130 (exstincta). *Pl.* 3, *fig.* 13.
1852. Giebel. Deutschl. petref., 651 (extincta).
1856. " Insect. d. vorwelt, 79.

Buprestites extincta. See Buprestites exstinctus.

4004. Buprestites falconeri. (Buprestidæ.)

Locality: Bovey Tracey, Devonshire, England. Horizon: Miocene.

1862. Heer. Phil. trans., clii: 1082. *Pl.* 68, *fig.* 21.

4005. Buprestites major. (Buprestidæ.)

Locality: Bonn, Rhenish Prussia. Horizon: Aquitanian.

1852. Giebel. Deutschl. petref., 651.
See also Buprestis major.

4006. Buprestites minnæ. (Buprestidæ.)

Locality: Vicinity Eisleben, Saxony. Horizon: ———.

1856. Giebel. Zeitschr. ges. naturwiss., vii: 384–385. *Pl.* 5, *fig.* 1.
See also Buprestis minnæ.

3988. Buprestis carbonum. (Buprestidæ.)

Compared with B. mœsta.

Localities: Bonn, Baireuth, Rhenish Prussia. Horizon: Aquitanian.

1837.	Germar.	Isis., 1837: 423 (undescr.).
1837.	"	Fauna insect. Europæ, xix: 4. *Pl.* 4.
1840.	——.	Verz. samml. Bayr., 71.
1852.	Giebel.	Deutschl. petref., 651.

See also Dicerca carbonum, Buprestites carbonum.

3989. Buprestis major. (Buprestidæ.)

Compared with B. cariosæ.

Locality: Vicinity Bonn, Rhenish Prussia. Horizon: Aquitanian.

1837.	Germar.	Fauna insect. Europæ, xix: 2. *Pl.* 2.
1847.	Heer.	Insektenf. tertiärg. Oeningen, i: 102.
1852.	Giebel.	Deutschl. petref., 651.
1856.	"	Insect. d. vorwelt, 78–79.

See also Buprestites major.

3990. Buprestis meyeri. (Buprestidæ.)

Locality: Sieblos, Rhenish Prussia. Horizon: Aquitanian.

1858.	Heyden.	Palaeontogr., v: 115. *Pl.* 23, *fig.* 11.

3991. Buprestis minnæ. (Buprestidæ.)

Locality: Schwarze Minna, vicinity Eisleben, Saxony. Horizon: ——.

1856.	Giebel.	Insect. d. vorwelt, 79.

See also Buprestites minnæ.

3992. Buprestis saxigena. (Buprestidæ.)

Locality: Nicola River, British Columbia. Horizon: ——.

1879.	Scudder.	Rep. progr. geol. surv. Can., 1877–'78: B 181.
1879.	"	Insect. tert. Nicola, 6.
1890.	"	Tert. ins. N. A., 494–495. *Pl.* 2, *figs.* 24, 25.

3993. Buprestis senecta. (Buprestidæ.)

Locality: Sieblos, Rhenish Prussia. Horizon: Aquitanian.

1858.	Heyden.	Palaeontogr., v: 116. *Pl.* 23, *fig.* 12.

3994. Buprestis sepulta. (Buprestidæ.)

Locality: Nicola River, British Columbia. Horizon: ——.

1879.	Scudder.	Rep. progr. geol. surv. Can., 1877–'78: B 181.
1879.	"	Insect. tert. Nicola, 6.
1890.	"	Tert. ins. N. A., 495. *Pl.* 2, *fig.* 26.

3995. Buprestis tertiaria. (Buprestidæ.)

Locality: Nicola River, British Columbia. Horizon: ——.

1879.	Scudder.	Rep. progr. geol. surv. Can., 1877–'78: B 180-181.
1879.	"	Insect. tert. Nicola, 5–6.
1890.	"	Tert. ins. N. A., 493–494. *Pl.* 2, *fig.* 23.

3996. Buprestis tradita. (Buprestidæ.)

Locality: Rott, Rhenish Prussia. Horizon: Aquitanian.

1859.	Heyden.	Palaeontogr., viii: 3. *Pl.* 2, *fig.* 9.

3997. **Buprestis xylographica.** (Buprestidæ.)

Locality: Stösschen, vicinity Linz, Austria. Horizon: Miocene.

1849. Germar. Zeitschr. deutsch. geol. gesellsch., i: 55–57. *Pl.* 2, *fig.* 1.
1852. Giebel. Deutschl. petref., 651.
See also Chrysobothris xylographica, Buprestites xylographica.

3998. **Buprestites agriloides** (1). (Buprestidæ.)

Distinct from the next.

Locality: Oeningen, Baden. Horizon: Tortonian.

1862. Heer. Verhandl. holl. maatsch. wetensch., xvi: 90. *Pl.* 7, *fig.* 24.

3999. **Buprestites agriloides** (2). (Buprestidæ.)

Distinct from the preceding.

Locality: Haseninsel, Greenland. Horizon: ——.

1883. Heer. Flora foss. grönl., ii: 144. *Pl.* 109, *figs.* 11, 11*b*.

4000. **Buprestites alutacea.** (Buprestidæ.)

Locality: Bonn, Rhenish Prussia. Horizon: Aquitanian.

1852. Giebel. Deutschl. petref., 651.
See also Buprestis alutacea.

4001. **Buprestites carbonum.** (Buprestidæ.)

Locality: Bonn, Rhenish Prussia. Horizon: Aquitanian.

1852. Giebel. Deutschl. petref., 651.
See also Buprestis carbonum, etc.

4002. **Buprestites debilis.** (Buprestidæ.)

Locality: Sieblos, Rhenish Prussia. Horizon: Aquitanian.

1860. Heer. Hassencamp, Würzb. naturwiss. zeitschr, i: 79 (undescr.).

4003. **Buprestites exstinctus.** (Buprestidæ.)

Locality: (Oeningen?, Baden). Horizon: Tortonian.

1847. Heer. Insektenf. tertiärg. Oeningen, i: 129–130 (exstincta). *Pl.* 3, *fig.* 13.
1852. Giebel. Deutschl. petref., 651 (extincta).
1856. " Insect. d. vorwelt, 79.

Buprestites extincta. See Buprestites exstinctus.

4004. **Buprestites falconeri.** (Buprestidæ.)

Locality: Bovey Tracey, Devonshire, England. Horizon: Miocene.

1862. Heer. Phil. trans., clii: 1082. *Pl.* 68, *fig.* 21.

4005. **Buprestites major.** (Buprestidæ.)

Locality: Bonn, Rhenish Prussia. Horizon: Aquitanian.

1852. Giebel. Deutschl. petref., 651.
See also Buprestis major.

4006. **Buprestites minnæ.** (Buprestidæ.)

Locality: Vicinity Eisleben, Saxony. Horizon: ——.

1856. Giebel. Zeitschr. ges. naturwiss., vii: 384–385. *Pl.* 5, *fig.* 1.
See also Buprestis minnæ.

4007. Buprestites œningensis. (Buprestidæ.)

Locality: Oeningen, Baden. Horizon: Tortonian.

1847. Heer. Insektenf. tertiärg. Oeningen, i: 128–129. *Pl.* 2, *fig.* 17.
1852. Giebel. Deutschl. petref., 651.
1856. " Insect. d. vorwelt, 79.

4008. Buprestites xylographicus. (Buprestidæ.)

Locality: Linz, Austria. Horizon: Miocene.

1852. Giebel. Deutschl. petref., 651 (xylographica).
See also Buprestis xylographica, etc.

4009. Byrrhus ——. (Byrrhidæ.)

Locality: Mundesley, England. Horizon: Pleistocene.

1888. Bell. Entom., xxi: 2.

4010. Byrrhus ——. (Byrrhidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1845. Berendt. Bernst. befindl. organ. reste vorw., i: 56.

4011. Byrrhus exanimatus. (Byrrhidæ.)

Locality: Rott, Rhenish Prussia. Horizon: Aquitanian.

1866. Heyd.-Heyd. Palaeontogr., xv: 139–140. *Pl.* 24, *fig.* 22.
1866. " Käfer u. polypen, 9–10. *Pl.* 3, *fig.* 22.

4012. Byrrhus lucæ. (Byrrhidæ.)

Locality: Rott, Rhenish Prussia. Horizon: Aquitanian.

1859. Heyden. Palaeontogr., viii: 3. *Pl.* 1, *fig.* 7.

4013. Byrrhus œningensis. (Byrrhidæ.)

Locality: Oeningen, Baden. Horizon: Tortonian.

1847. Heer. Insektenf. tertiärg. Oeningen, i: 44–46. *Pl.* 2, *figs.* 5, 9, 9*b–d*.
1852. Giebel. Deutschl. petref., 653.
1856. " Insect. d. vorwelt, 49.
1862. Heer. Verdandl. holl. maatsch. wetensch., xvi: 57. *Pl.* 3, *fig.* 25.
See also Byrrhus pauper.

4014. Byrrhus pauper. (Byrrhidæ.)

Locality: Oeningen, Baden. Horizon: Tortonian.

1851. Stizenberger. Uebers. verstein. Baden, 101 (as of Heer. Name only; by mistake for B. œningensis?).
See also Byrrhus œningensis.

4015. Bythinus ——. (Pselaphidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1856. Menge. Progr. petrischule Danzig, 1856: 22.

Calænius punctulatus. See Chlænius punctulatus.

4016. Calandra ——. (Calandridæ.)

Locality: Aix, France. Horizon: Ligurian.

1854. Pictet. Traité de paléont., 2e éd., ii: 351 (fide Serres MSS.).

Calasposoma ——. See Colasposoma ——.

4017. Calathus ——. (Carabidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1845. Berendt. Bernst. befindl. organ. reste vorw., i: 56.

4018. Callidium ——. (Cerambycidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1845. Berendt. Bernst. befindl. organ. reste vorw., i: 56.

4019. Callidium ——. (Cerambycidæ.)

Compared with C. fennicum.

Locality: Utznach, Switzerland. Horizon: Pleistocene?.

1839. Brullé. Gisem. ins. foss., 20.

4020. Callidium ——. (Cerambycidæ.)

Compared with C. abdominale.

Locality: Aix, France. Horizon: Ligurian.

1829. Serres. Géogn. terrains tert., 225.

4021. Callidium escheri. (Cerambycidæ.)

Compared with C. strepens.

Locality: Oeningen, Baden. Horizon: Tortonian.

1865. Heer. Urwelt der Schweiz, 375. *Fig.* 253, on *p.* 376.
1872. " Monde prim. Suisse, 460. *Fig.* 253, on *p.* 461.
1876. " Prim. world Switz., ii: 31. *Fig.* 253, on *p.* 32.
1879. " Urwelt der Schweiz, 2e aufl., 401. *Fig.* 295, on *p.* 402.

4022. Callidium procerum. (Cerambycidæ.)

Compared with C. strepens.

Locality: Oeningen, Baden. Horizon: Tortonian.

1865. Heer. Urwelt der Schweiz, 375.
1872. " Monde prim. Suisse, 460.
1876. " Prim. world Switz., ii: 31.
1879. " Urwelt der Schweiz, 2e aufl., 401.

Callisthenes agassizii. See Calosoma (Callisthenes) agassizii.

4023. Calosoma agassizii. (Carabidæ.)

Locality: Aix, France. Horizon: Ligurian.

1874. Oustalet. La nature, iii: 33. *Fig.*
See also Calosoma (Callisthenes) agassizii, etc.

4024. Calosoma (Callisthenes) agassizii. (Carabidæ.)

Locality: Aix, France. Horizon: Ligurian.

1874. Oustalet. Ann. sc. géol., v, art. 2: 84-92 (Agassiz). *Pl.* 1, *figs.* 2, 2*abc*.
See also Carabus agassizi, Calosoma saportanum, Calosoma agassizii.

4025. Calosoma caraboides. (Carabidæ.)

Compared with C. longipenne Dej., South America.

Localities: Locle, Switzerland; Oeningen, Baden. Horizon: Tortonian.

1860. Heer. Foss. calosomen, 7-8. *Pl.*, *fig.* 7.
1865. " Urwelt der Schweiz, 384, 385.
1872. " Monde prim. Suisse, 471.
1876. " Prim. world Switz., ii: 41, 42.
1879. " Urwelt der Schweiz, 2e aufl., 410.

4026. Calosoma catenulatum. (Carabidæ.)

Compared with C. sayi and C. rugosum Dej., America.

Localities: Bonn, Rhenish Prussia; Oeningen, Baden. Horizons: Aquitanian, Tortonian.

1860.	Heer.	Foss. calosomen, 4–5. *Pl., fig.* 3.
1865.	"	Urwelt der Schweiz, 384.
1872.	"	Monde prim. Suisse, 471.
1876.	"	Prim. world Switz., ii: 41.
1879.	"	Urwelt der Schweiz, 2e aufl., 410.

4027. Calosoma deplanatum. (Carabidæ.)

Locality: Oeningen, Baden. Horizon: Tortonian.

1860.	Heer.	Foss. calosomen, 6. *Pl., fig.* 6.

4028. Calosoma escheri. (Carabidæ.)

Locality: Oeningen, Baden. Horizon: Tortonian.

1860.	Heer.	Foss. calosomen, 7. *Pl., fig.* 5.

4029. Calosoma escrobiculatum. (Carabidæ.)

Compared with C. brunneum, Peru.

Locality: Oeningen, Baden. Horizon: Tortonian.

1860.	Heer.	Foss. calosomen, 6–7. *Pl., figs.* 4*ab*.

4030. Calosoma jaccardi. (Carabidæ.)

Compared with C. inquisitor F., Europe.

Locality: Locle, Switzerland. Horizon: Miocene.

1860.	Heer.	Foss. calosomen, 4. *Pl., fig.* 2.
1865.	"	Urwelt der Schweiz, 384.
1872.	"	Monde prim. Suisse, 471.
1876.	"	Prim. world Switz., ii: 41.
1879.	"	Urwelt der Schweiz, 2e aufl., 410.

4031. Calosoma nauckianum. (Carabidæ.)

Compared with C. maderæ F., Madeira.

Locality: Oeningen, Baden. Horizon: Tortonian.

1860.	Heer.	Foss. calosomen, 5–6. *Pl., fig.* 3.
1862.	"	Verhandl. holl. maatsch. wetensch., xvi: 17–18. *Pl.* 1, *fig.* 4.
1865.	"	Urwelt der Schweiz, 384. *Fig.* 283.
1872.	"	Monde prim. Suisse, 471 (naukianum). *Fig.* 283
1876.	"	Prim. world Switz., ii: 41. *Fig.* 283, on *p.* 42.
1879.	"	Urwelt der Schweiz, 2e aufl., 410. *Fig.* 325.

Calosoma naukianum. See Calosoma nauckianum.

4032. Calosoma saportanum. (Carabidæ.)

Locality: Aix, France. Horizon: Ligurian.

1874.	Heer.	MSS. in Oustalet, Ann. sc. géol., v, art. 2: 84, 91–92. (= C. agassizii fide Oust.) *Pl.* 1, *fig.* 2*b*.

See also Calosoma (Callisthenes) agassizii, etc.

4033. Campsosternus atavus. (Elateridæ.)

Compared with C. gemma and C. fulgens.

Locality: Kutschlin, Bohemia. Horizon: Miocene.

1881. Deichmüller. Foss. ins. diatomeensch. Kutschlin, 14–16. *Pl.* 21, *figs.* 4*a–c*.
1881. " Verhandl. leop.-carol. acad. naturf., xlii: 306–308. *Pl.* 21, *figs.* 4*a–c*.

4034. Cantharis ——. (Meloidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1845. Berendt. Bernst. befindl. organ. reste vorw., i: 56.

4035. Cantharis ——. (Meloidæ.)

Compared with C. nigricans Fabr.

Locality: Prussian amber. Horizon: Ligurian.

1832. Burmeister. Handb. ent., i: 635.
1836. " Man. ent., 577.

4036. Cantharis ——. (Meloidæ.)

Locality: Rhine, Germany. Horizon: Aquitanian ?.

1831. Goldfuss. Verhandl. leop.-carol. akad. naturf., vii, i: 118.

Capnodis abdominalis. See Capnodis puncticollis-abdominalis.

4037. Capnodis antiqua. (Buprestidæ.)

Compared with C. cariosa Pall.

Locality: Oeningen, Baden. Horizon: Tortonian.

1847. Heer. Insektenf. tertiärg. Oeningen, i: 95–102, 221. *Pl.* 2, *fig.* 18; *pl.* 3, *fig.* 1.
1852. Giebel. Deutschl. petref., 652.
1854. Pictet. Traité de paléont., 2e éd., ii: 331. *Pl.* 40, *fig.* 14.
1856. Giebel. Insect. d. vorwelt, 81.
1862. Heer. Verhandl. holl. maatsch. wetensch., xvi: 83. *Pl.* 7, *figs.* 17, 18.
1865. " Urwelt der Schweiz, 377. *Fig.* 260, on *p.* 378.
1872. " Monde prim. Suisse, 463. *Fig.* 260.
1876. " Prim. world Switz., ii: 33. *Fig.* 260, on *p.* 34.
1879. " Urwelt der Schweiz, 2e aufl. 403. *Fig.* 302, on *p.* 404.

See also Capnodis antiqua var. minor.

4038. Capnodis antiqua var. minor. (Buprestidæ.)

Locality: Oeningen, Baden. Horizon: Tortonian.

1847. Heer. Insektenkf. tertiärg. Oeningen, i: 100–101. *Pl.* 3, *fig.* 1*b*.

See also Capnodis antiqua.

Capnodis compressa. See Capnodis puncticollis-compressa.

Capnodis minor. See Capnodis antiqua var. minor.

4039. Capnodis puncticollis. (Buprestidæ.)

Locality: Oeningen, Baden. Horizon: Tortonian.

1847. Heer. Insektenf. tertiärg. Oeningen, i: 102–104. *Pl.* 3, *fig.* 3.
1852. Giebel. Deutschl. petref., 652.
1856. " Insect. d. vorwelt, 81–82.
1862. Heer. Verhandl. holl. maatsch. wetensch., xvi: 84. *Pl.* 7, *figs.* 15, 16.

See also Capnodis puncticollis-abdominalis, C. puncticollis-compressa.

4040. Capnodis puncticollis-abdominalis. (Buprestidæ.)

Locality: (Oeningen, Baden.) Horizon: Tortonian.

1847. Heer. Insektenf. tertiärg. Oeningen, i: 104–105. *Pl.* 3, *fig.* 3*c*.
See also Capnodis puncticollis, etc.

4041. Capnodis puncticollis-compressa. (Buprestidæ.)

Locality: (Oeningen, Baden.) Horizon: Tortonian.

1847. Heer. Insektenf. tertiärg. Oeningen, i: 104. *Pl.* 3, *fig.* 3*b*.
See also Capnodis puncticollis, etc.

4042. Capnodis spectabilis. (Buprestidæ.)

Compared with C. cariosa Pall.

Locality: (Oeningen, Baden.) Horizon: Tortonian.

1862. Heer. Verhandl. holl. maatsch. wetensch., xvi: 83–84. *Pl.* 7, *figs.* 12–14
1865. " Urwelt der Schweiz, 377. *Fig.* 261, on *p.* 378.
1872. " Monde prim. Suisse, 463. *Fig.* 261.
1876. " Prim. world Switz., ii: 34. *Fig.* 261.
1879. " Urwelt der Schweiz, 2ᵉ aufl., 403. *Fig.* 303, on *p.* 404.

Caprologus gracilis. See Coprologus gracilis.

4043. Carabites cordicollis. (Carabidæ.)

Locality: Dürnten, Switzerland. Horizon: Interglacial.

1865. Heer. Urwelt der Schweiz, 502. *Fig.* 359, on *p.* 501.
1872. " Monde prim. Suisse, 615–616. *Fig.* 359, on *p.* 614.
1876. " Prim. world Switz., ii: 169. *Fig.* 359, on *p.* 168.
1879. " Urwelt der Schweiz, 2ᵉ aufl., 532. *Fig.* 402, on *p.* 531.

4044. Carabites diluvianus. (Carabidæ.)

Locality: Dürnten, Switzerland. Horizon: Interglacial.

1865. Heer. Urwelt der Schweiz, 502. *Figs.* 357*a–c*, on *p.* 501.
1872. " Monde prim. Suisse, 615–616. *Figs.* 357*a–c*, on *p.* 614.
1876. " Prim. world Switz., ii: 169. *Figs.* 357*a–c*, on *p.* 168.
1879. " Urwelt der Schweiz, 2ᵉ aufl., 532. *Fig.* 400, on *p.* 531.
See also Carabites (Harpalus ?) diluvianus.

4045. Carabites (Harpalus ?) diluvianus. (Carabidæ.)

Locality: Dürnten, Switzerland. Horizon: Interglacial.

1865. Heer. Urwelt der Schweiz, expl. fig. 357, on p. 501.
1872. " Monde prim. Suisse, expl. fig. 357, on p. 614.
1876. " Prim. world Switz., ii: expl. fig. 357, on p. 168.
See also Carabites diluvianus.

4046. Carabites exilis. (Carabidæ.)

Locality: Oeningen, Baden. Horizon: Tortonian.

1862. Heer. Verhandl. holl. maatsch. wetensch., xvi: 35. *Pl.* 1, *fig.* 28.

4047. Carabites feildenianus. (Carabidæ.)

Locality: Watercourse Ravine, near Discovery Harbor, Grinnell Land.
Horizon: Miocene.

1878. Heer. Quart. journ. geol. soc. Lond., xxxiv: 69.
1878. " Miocene flora Grinnell-landes, 38. *Pl.* 9, *figs.* 11, 11*b*.
1878. " Flora foss. arct., v, i: 38. *Pl.* 9, *figs.* 11, 11*b*.

4048. Carabites hyperboreus. (Carabidæ.)

Locality: Cap Staratschin, Spitzbergen. Horizon: Miocene

1870. Heer. K. svenska vetensk.-akad. handl., viii, No. 7: 73. *Pl.* 16, *figs.* 34–35.

4049. Carabites islandicus. (Carabidæ.)

Locality: Iceland. Horizon: Miocene.

1868. Heer. Flora foss. arct., i: 154. *Pl.* 27, *figs.* 21, 21*b*.

4050. Carabites læsicollis. (Carabidæ.)

Locality: Oeningen, Baden. Horizon: Tortonian.

1862. Heer. Verhandl. holl maatsch. wetensch., xvi: 35. *Pl.* 1, *fig.* 27.

4051. Carabites nitens. (Carabidæ.)

Locality: Cap Staratschin, Spitzbergen. Horizon: Miocene.

1870. Heer. K. svenska vetensk.-akad. handl., viii, No. 7: 73. *Pl.* 16, *figs.* 19, 20, 20*bc*.

4052. Carabus ———. (Carabidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1835. Gravenhorst. Uebers. schles. gesellsch. vaterl. cult., 1834: 92.

4053. Carabus ———. (Carabidæ.)

Locality: Glücksbrunn, Hesse. Horizon: Braunkohl.

1820. Schlotheim. Petrefactenk., 44.

4054. Carabus agassizi. (Carabidæ.)

Locality: Aix, France. Horizon: Ligurian.

1850. Barthélemy. Car. d'Agass., 1–4.
1851. " Guér., Rev. et mag. zool., (2), iii: 203.
1856. Giebel. Insect. d. vorwelt, 61.
See also Calosoma (Callisthenes) agassizi, etc.

4055. Carabus arvensis (recent). (Carabidæ.)

Locality: Schwerzenbach, Switzerland. Horizon: Glacial clay.

[1787. Fabricius. Mant. ins., i: 196.]
1879. Heer. Urwelt der Schweiz, 2^e aufl., 581. *Pl.* 12, *figs.* 14, 14*b*.
1886. Scudder. Bull. U. S. geol. surv., No. 31: 85.

4056. Carabus nitens. (Carabidæ.)

Locality: Garvel Park, Clyde, England. Horizon: Pleistocene.

1888. Bell. Entom., xxi: 2 (Carbera).

4057. Carabus novalensis. (Carabidæ.)

Locality: Novale, Italy. Horizon: ———.

1886. Omboni. Alc. foss. ins. Ven., 10–11. *Pl.* 3, *fig.* 15.
1886. " Atti r. ist. ven., (6), iv: 1430–1431. *Pl.* 3, *fig.* 15.

4058. Carabus thürachii. (Carabidæ.)

Locality: Hösbach, Bavaria. Horizon: Lower Pleistocene.

1884. Flach. Käfer unterpleist. Hösbach, 3. *Pl.* 1, *fig.* 1.
1884. " Verhandl. physik.-med. gesellsch. Würzb., n. f., xviii: 287. *Pl.* 8, *fig.* 1.

Carbera nitens. See Carabus nitens.

4040. Capnodis puncticollis-abdominalis. (Buprestidæ.)

Locality: (Oeningen, Baden.) Horizon: Tortonian.

1847.	Heer.	Insektenf. tertiärg. Oeningen, i: 104–105. *Pl.* 3, *fig.* 3*c*.

See also Capnodis puncticollis, etc.

4041. Capnodis puncticollis-compressa. (Buprestidæ.)

Locality: (Oeningen, Baden.) Horizon: Tortonian.

1847.	Heer.	Insektenf. tertiärg. Oeningen, i: 104. *Pl.* 3, *fig.* 3*b*.

See also Capnodis puncticollis, etc.

4042. Capnodis spectabilis. (Buprestidæ.)

Compared with C. cariosa Pall.

Locality: (Oeningen, Baden.) Horizon: Tortonian.

1862.	Heer.	Verhandl. holl. maatsch. wetensch., xvi: 83–84. *Pl.* 7, *figs.* 12–14
1865.	"	Urwelt der Schweiz, 377. *Fig.* 261, on *p.* 378.
1872.	"	Monde prim. Suisse, 463. *Fig.* 261.
1876.	"	Prim. world Switz., ii: 34. *Fig.* 261.
1879.	"	Urwelt der Schweiz, 2^{e} aufl., 403. *Fig.* 303, on *p.* 404.

Caprologus gracilis. See Coprologus gracilis.

4043. Carabites cordicollis. (Carabidæ.)

Locality: Dürnten, Switzerland. Horizon: Interglacial.

1865.	Heer.	Urwelt der Schweiz, 502. *Fig.* 359, on *p.* 501.
1872.	"	Monde prim. Suisse, 615–616. *Fig.* 359, on *p.* 614.
1876.	"	Prim. world Switz., ii: 169. *Fig.* 359, on *p.* 168.
1879.	"	Urwelt der Schweiz, 2^{e} aufl., 532. *Fig.* 402, on *p.* 531.

4044. Carabites diluvianus. (Carabidæ.)

Locality: Dürnten, Switzerland. Horizon: Interglacial.

1865.	Heer.	Urwelt der Schweiz, 502. *Figs.* 357*a–c*, on *p.* 501.
1872.	"	Monde prim. Suisse, 615–616. *Figs.* 357*a–c*, on *p.* 614.
1876.	"	Prim. world Switz., ii: 169. *Figs.* 357*a–c*, on *p.* 168.
1879.	"	Urwelt der Schweiz, 2^{e} aufl., 532. *Fig.* 400, on *p.* 531.

See also Carabites (Harpalus ?) diluvianus.

4045. Carabites (Harpalus ?) diluvianus. (Carabidæ.)

Locality: Dürnten, Switzerland. Horizon: Interglacial.

1865.	Heer.	Urwelt der Schweiz, expl. fig. 357, on p. 501.
1872.	"	Monde prim. Suisse, expl. fig. 357, on p. 614.
1876.	"	Prim. world Switz., ii: expl. fig. 357, on p. 168.

See also Carabites diluvianus.

4046. Carabites exilis. (Carabidæ.)

Locality: Oeningen, Baden. Horizon: Tortonian.

1862.	Heer.	Verhandl. holl. maatsch. wetensch., xvi: 35. *Pl.* 1, *fig.* 28.

4047. Carabites feildenianus. (Carabidæ.)

Locality: Watercourse Ravine, near Discovery Harbor, Grinnell Land.
Horizon: Miocene.

1878.	Heer.	Quart. journ. geol. soc. Lond., xxxiv: 69.
1878.	"	Miocene flora Grinnell-landes, 38. *Pl.* 9, *figs.* 11, 11*b*.
1878.	"	Flora foss. arct., v, i: 38. *Pl.* 9, *figs.* 11, 11*b*.

4048. Carabites hyperboreus. (Carabidæ.)

Locality: Cap Staratschin, Spitzbergen. Horizon: Miocene

1870. Heer. K. svenska vetensk.-akad. handl., viii, No. 7: 73. *Pl.* 16, *figs.* 34–35.

4049. Carabites islandicus. (Carabidæ.)

Locality: Iceland. Horizon: Miocene.

1868. Heer. Flora foss. arct., i: 154. *Pl.* 27, *figs.* 21, 21*b*.

4050. Carabites læsicollis. (Carabidæ.)

Locality: Oeningen, Baden. Horizon: Tortonian.

1862. Heer. Verhandl. holl maatsch. wetensch., xvi: 35. *Pl.* 1, *fig.* 27.

4051. Carabites nitens. (Carabidæ.)

Locality: Cap Staratschin, Spitzbergen. Horizon: Miocene.

1870. Heer. K. svenska vetensk.-akad. handl., viii, No. 7: 73. *Pl.* 16, *figs.* 19, 20, 20*bc*.

4052. Carabus ———. (Carabidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1835. Gravenhorst. Uebers. schles. gesellsch. vaterl. cult., 1834: 92.

4053. Carabus ———. (Carabidæ.)

Locality: Glücksbrunn, Hesse. Horizon: Braunkohl.

1820. Schlotheim. Petrefactenk., 44.

4054. Carabus agassizi. (Carabidæ.)

Locality: Aix, France. Horizon: Ligurian.

1850. Barthélemy. Car. d'Agass., 1–4.
1851. " Guér., Rev. et mag. zool., (2), iii: 203.
1856. Giebel. Insect. d. vorwelt, 61.
See also Calosoma (Callisthenes) agassizi, etc.

4055. Carabus arvensis (recent). (Carabidæ.)

Locality: Schwerzenbach, Switzerland. Horizon: Glacial clay.

[1787. Fabricius. Mant. ins., i: 196.]
1879. Heer. Urwelt der Schweiz, 2ᵉ aufl., 581. *Pl.* 12, *figs.* 14, 14*b*.
1886. Scudder. Bull. U. S. geol. surv., No. 31: 85.

4056. Carabus nitens. (Carabidæ.)

Locality: Garvel Park, Clyde, England. Horizon: Pleistocene.

1888. Bell. Entom., xxi: 2 (Carbera).

4057. Carabus novalensis. (Carabidæ.)

Locality: Novale, Italy. Horizon: ———.

1886. Omboni. Alc. foss. ins. Ven., 10–11. *Pl.* 3, *fig.* 15.
1886. " Atti r. ist. ven., (6), iv: 1430–1431. *Pl.* 3, *fig.* 15.

4058. Carabus thürachii. (Carabidæ.)

Locality: Hösbach, Bavaria. Horizon: Lower Pleistocene.

1884. Flach. Käfer unterpleist. Hösbach, 3. *Pl.* 1, *fig.* 1.
1884. " Verhandl. physik.-med. gesellsch. Würzb., n. f., xviii: 287. *Pl.* 8, *fig.* 1.

Carbera nitens. See Carabus nitens.

4059. Cardiophorus ——. (Elateridæ.)

Locality: Prussian amber. Horizon: Ligurian.

1868. Smith. Quart. journ. sc., v: 184. *Pl., fig.* 6.

4060. Cardiophorus braunii. (Elateridæ.)

Locality: Oeningen, Baden. Horizon: Tortonian.

1847. Heer. Insektenf. tertiärg. Oeningen, i: 134–135. *Pl.* 4, *fig.* 4.
1852. Giebel. Deutschl. petref., 651.
1856. " Insect. d. vorwelt, 97.

4061. Caryoborus ruinosus. (Bruchidæ.)

Locality: Rott, Rhenish Prussia. Horizon: Aquitanian.

1859. Heyden. Palaeontogr., viii: 8–9. *Pl.* 2, *fig.* 1.

4062. Caryoborus striolatus. (Bruchidæ.)

Locality: Oeningen, Baden. Horizon: Tortonian.

1861. Heer. Rech. climat pays tert., 203 (undescr.).

4063. Cassida ——. (Chrysomelidæ.)

Compared with C. equestris Fabr.

Locality: Aix, France. Horizon: Ligurian.

1829. Curtis. Edinb. new phil. journ. vii: 295.
1829. " Murchison-Lyell, Tert. form. Aix, 11.

4064. Cassida ——. (Chrysomelidæ.)

Compared with C. viridis Fabr.

Locality: Aix, France. Horizon: Ligurian.

1829. Curtis. Edinb. new phil. journ., vii: 295.
1829. " Murchison-Lyell, Tert. form. Aix, 11.

4065. Cassida ——. (Chrysomelidæ.)

Locality: Zimmersheim, Alsatia. Horizon: Middle Oligocene.

1888. Foerster. Mitth. comm. geol. Elsass-Lothr., i: 150, 165.
1889. " Mitth. comm. geol. Elsass-Lothr., ii: 102.

4066. Cassida —— (3 sp.). (Chrysomelidæ.)

Locality: Brunstatt, Alsatia. Horizon: Middle Oligocene.

1888. Foerster. Mitth. comm. geol. Elsass-Lothr., i: 165.
1889. " Mitth. comm. geol. Elsass-Lothr., ii: 102.

4067. Cassida ——. (Chrysomelidæ.)

Locality: Aix, France. Horizon: Ligurian.

1847. Hope. Trans. ent. soc. Lond., iv: 251.

4068. Cassida ——. (Chrysomelidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1856. Menge. Progr. petrischule Danzig, 1856: 21.

4069. **Cassida** ——. (Chrysomelidæ.)

Compared with C. meridionalis.

Locality: Aix, France. Horizon: Ligurian.

1829.	Serres.	Géogn. terrains tert., 225.

See also Chrysomela —— Burm.

4070. **Cassida** ——. (Chrysomelidæ.)

Locality: Lexden, England. Horizon: Peat beds.

1863.	Wollaston.	Quart. journ. geol. soc. Lond., xix, i: 401, No. 4.
1888.	Bell.	Entom., xxi: 2.

Cassida ——. See Coccinella (or Cassida) ——.

Cassida ——. See Cossyphus (or Cassida) ——.

4071. **Cassida blancheti.** (Chrysomelidæ.)

Compared with C. thoracica Kug.

Localities: Oeningen, Baden; Aix, France. Horizons: Tortonian, Ligurian.

1856.	Heer.	Viert. naturf. gesellsch. Zürich, i: 25–26. *Pl.* 1, *fig.* 17.
1865.	"	Urwelt der Schweiz, 372. *Fig.* 239, on *p.* 371.
1872.	"	Monde prim. Suisse, 456. *Fig.* 239, on *p.* 455.
1874.	Oustalet.	Ann. sc. géol., v, art. 2: 340–344. *Pl.* 4, *fig.* 15.
1876.	Heer.	Prim. world Switz., ii: 27. *Fig.* 239.
1879.	"	Urwelt der Schweiz, 2ᵉ aufl., 398. *Fig.* 281, on *p.* 397.

4072. **Cassida hermione.** (Chrysomelidæ.)

Compared with C. murræa F.

Locality: Oeningen, Baden. Horizon: Tortonian.

1847.	Heer.	Insektenf. tertiärg. Oeningen, i: 205–206. *Pl.* 7, *fig.* 6.
1852.	Giebel.	Deutschl. petref., 648.
1856.	"	Insect. d. vorwelt, 114.
1865.	Heer.	Urwelt der Schweiz, 372.
1872.	"	Monde prim. Suisse, 456.
1876.	"	Prim. world Switz., ii: 27.
1879.	"	Urwelt der Schweiz, 2ᵉ aufl., 398.

4073. **Cassida interemta.** (Chrysomelidæ.)

Locality: Rott, Rhenish Prussia. Horizon: Aquitanian.

1862.	Heyden.	Palaeontogr., x: 74. *Pl.* 10, *fig.* 16.

4074. **Cassida megapenthes.** (Chrysomelidæ.)

Locality: (Oeningen ?, Baden). Horizon: Tortonian.

1847.	Heer.	Insektenf. tertiärg. Oeningen, i: 206–207. *Pl.* 8, *fig.* 10.
1852.	Giebel.	Deutschl. petref., 648.
1856.	"	Insect. d. vorwelt, 114.

4075. **Catops** ——. (Silphidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1845.	Berendt.	Bernst. befindl. organ. reste vorw., i: 56.

Cerambix ——. See Cerambyx —— Berendt, Bloch.

4076. Cerambycites ——. (Cerambycidæ.)

Locality: Brunstatt, Alsatia. Horizon: Middle Oligocene.

1890. Foerster. In litt.

4077. Cerambyx ——. (Cerambycidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1830. Berendt. Insekten im bernstein, 30 (Cerambix).

4078. Cerambyx ——. (Cerambycidæ.)

Locality: Copal. Horizon: Recent.

1776. Bloch. Beschäft. berl. gesellsch. naturf. freunde, ii: 179-180 (Cerambix). *Pl.* 5, *fig.* 21.

4079. Cerambyx —— (leg). (Cerambycidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1831. Burmeister. Oken, Isis, 1831: 1100.

4080. Cerambyx ——. (Cerambycidæ.)

Locality: Rhine, Germany. Horizon: Aquitanian?.

1831. Goldfuss. Verhandl. leop.-carol. akad. naturf., vii, i: 118.

4081. Cerambyx ——. (Cerambycidæ.)

Locality: Oeningen, Baden. Horizon: Tortonian.

1834. Keferstein. Naturg. erdkörp., ii: 328.

4082. Cerambyx —— (larva). (Cerambycidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1856. Menge. Progr. petrischule Danzig, 1856: 23.

4083. Cerambyx ——. (Cerambycidæ.)

Locality: Aix, France. Horizon: Ligurian.

1854. Pictet. Traité de paléont., 2e éd., ii: 355 (fide Serres MSS.).

4084. Cercyon ——. (Hydrophilidæ.)

Locality: Hösbach, Bavaria. Horizon: Lower Pleistocene.

1884. Flach. Käfer unterpleist. Hösbach, 9. *Pl.* 2, *fig.* 3.
1884. " Verhandl. physik.-med. gesellsch. Würzb., n. f., xviii: 293. *Pl.* 9, *fig.* 3.

4085. Cercyon? terrigena. (Hydrophilidæ.)

Locality: Nicola River, British Columbia. Horizon: ——.

1879. Scudder. Rept. progr. geol. surv. Can., 1877-'78: B 178.
1879. " Ins. tert. Nicola, 4.
1890. " Tert. ins. N. A., 510-511. *Pl.* 2, *fig.* 21.

4086. Cetonia ——. (Scarabæidæ.)

Compared with C. hirtellus.

Locality: Aix, France. Horizon: Ligurian.

1829. Curtis. Edinb. new phil. journ., vii: 295.
1829. " Murchison-Lyell, Tert. form. Aix, 11.

4087. Cetonia ——. (Scarabæidæ.)

Compared with C. stictica Fabr.

Locality: Aix, France. Horizon: Ligurian.

1829. Curtis. Edinb. new phil. journ., vii: 295.
1829. " Murchison-Lyell, Tert. form. Aix, 11.

4088. Ceutorhynchus —— (3 sp.). (Curculionidæ.)

Locality: Brunstatt, Alsatia. Horizon: Middle Oligocene.

1888. Foerster. Mitth. comm. geol. Elsass-Lothr., i: 165.
1889. " Mitth. comm. geol. Elsass-Lothr., ii: 102.

4089. Ceutorhynchus funeratus. (Curculionidæ.)

Locality: Rott, Rhenish Prussia. Horizon: Aquitanian.

1866. Heyd.-Heyd. Palaeontogr., xv: 153. *Pl.* 24, *fig.* 7.
1866. " Käfer u. polypen, 23. *Pl.* 3, *fig.* 7.

4090. Chalcodermus kirschi. (Curculionidæ.)

Compared with C. ebeninus.

Locality: Kutschlin, Bohemia. Horizon: Miocene.

1881. Deichmüller. Foss. ins. diatomeensch. Kutschlin, 24–26. *Pl.* 21, *figs.* 9, 9*a–c*, 10, 11.
1881. " Verhandl. leop.-carol. akad. naturf., xlii: 316–318. *Pl.* 21, *figs.* 9, 9*a–c*, 10, 11.

4091. Chalcophora lævigata. (Buprestidæ.)

Compared with C. fabricii Rossi.

Locality: Oeningen, Baden. Horizon: Tortonian.

1862. Heer. Verhandl. holl. maatsch. wetensch. Haarl., xvi: 85–86. *Pl.* 7, *figs.* 2–9.
1865. " Urwelt der Schweiz, 362, 378. *Fig.* 259.
1872. " Monde prim. Suisse, 444, 464. *Fig.* 259 on *p.* 463.
1876. " Prim. world Switz., ii: 16, 35. *Fig.* 259 on *p.* 34.
1879. " Urwelt der Schweiz, 2e aufl., 387, 403. *Fig.* 301 on *p.* 404.

4092. Chalcophora pulchella. (Buprestidæ.)

Locality: Oeningen, Baden. Horizon: Tortonian.

1862. Heer. Verhandl. holl. maatsch. wetensch. Haarl., xvi: 86–87. *Pl.* 7, *figs.* 10, 11.

4093. Chauliognathus pristinus. (Lampyridæ.)

Locality: Florissant, Colo. Horizon: Oligocene.

1876. Scudder. Bull. U. S. geol. surv. terr., ii: 81.
1885. " Zittel, Handb. palaeont., i, th. ii: 796. *Fig.* 1032.
1886. " Zittel-Barrois, Traité de paléont., ii: 796. *Fig.* 1050.

4094. Chilocorus —— (2 sp.). (Coccinellidæ.)

Locality: Brunstatt, Alsatia. Horizon: Middle Oligocene.

1890. Foerster. In litt.

4095. Chlænius ? ——. (Carabidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1845. Berendt. Bernst. befindl. organ. reste vorw., i: 56.

4096. Chlænius dietzii. (Carabidæ.)

Locality: Hösbach, Bavaria. Horizon: Lower Pleistocene.

1884. Flach. Käfer unterpleist. Hösbach, 4. *Pl.* 1, *fig.* 4.
1884. " Verhandl. physik.-med. gesellsch. Würzb., n. f., xviii: 288. *Pl.* 8, *fig.* 4.

4097. Chlænius electrinus. (Carabidæ.)

Compared with C. vestitus.

Locality: Prussian amber. Horizon: Ligurian.

1862. Giebel. Zeitschr. ges. naturwiss., xx: 320.

4098. Chlænius punctulatus. (Carabidæ.)

Compared with C. laticollis, United States.

Locality: Port Kennedy, Pa. Horizon: Postpliocene.

1876. Horn. Trans. Amer. ent. soc., v: 244.
1889. Lesley. Dict. foss. Penns., i: p. xiii (Calænius).
1890. Scudder. Tert. ins. N. A., 517–518. *Pl.* 1, *fig.* 7.

4099. Chlænius quadrisulcatus (recent). (Carabidæ.)

Locality: Hösbach, Bavaria. Horizon: Lower Pleistocene.

[1798. Illiger. Käfer preuss., i: 176.]
1884. Flach. Käfer unterpleist. Hösbach, 4. *Pl.* 1, *figs.* 3*a*, 3*b*.
1884. " Verhandl. physik.-med. gesellsch. Würzb., n. f., xviii: 288. *Pl.* 8, *figs.* 3*a*, 3*b*.

4100. Chœridium ? ebeninum. (Scarabæidæ.)

Compared with C. histeroides, United States.

Locality: Port Kennedy, Pa. Horizon: Postpliocene.

1876. Horn. Trans. Amer. ent. soc., v: 244–245.
1889. Lesley. Dict. foss. Penns., i: p. xiii.
1890. Scudder. Tert. ins. N. A., 490–491. *Pl.* 1, *figs.* 18–22.

4101. Choragus fictilis. (Anthribidæ.)

Locality: Green River, Wyo. Horizon: Oligocene.

1890. Scudder. Tert. ins. N. A., 465–466. *Pl.* 8, *fig.* 9.

4102. Choragus tertiarius. (Anthribidæ.)

Locality: Rott, Rhenish Prussia. Horizon: Aquitanian.

1866. Heyd.-Heyd. Palaeontogr., xv: 147. *Pl.* 23, *fig.* 8.
1866. " Käfer u. polypen, 17. *Pl.* 2, *fig.* 8.

4103. Chrysobothris haydeni. (Buprestidæ.)

Locality: Florissant, Colo. Horizon: Oligocene.

1876. Scudder. Bull. U. S. geol. surv. terr., ii: 80.

4104. **Chrysobothris xylographica.** (Buprestidæ.)

Locality: Stösschen, vicinity Linz, Austria. Horizon: Miocene.

1856. Giebel. Insect. d. vorwelt, 87.
See also Buprestis xylographica, etc.

4105. Chrysomela ———. (Chrysomelidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1845. Berendt. Bernst. befindl. organ. reste vorw., i: 56.

4106. Chrysomela ———. (Chrysomelidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1827. Brongniart. Dict. sc. nat., li: 233 (Chrysomèles).
1829. Serres. Géogn. terrains tert., 241.

4107. Chrysomela ———. (Chrysomelidæ.)

Compared with C. cerealis.

Locality: Aix, France. Horizon: Ligurian.

1832. Burmeister. Handb. ent., i: 639.
1836. " Man. ent., 580.
See also Cassida ——— Serres.

4108. Chrysomela ———. (Chrysomelidæ.)

Compared with C. banksii Fabr.

Locality: Aix, France. Horizon: Ligurian.

1829. Curtis. Edinb. new phil. journ., vii: 295.
1829. " Murchison-Lyell, Tert. form. Aix, 11.

4109. Chrysomela ———. (Chrysomelidæ.)

Locality: Aix, France. Horizon: Ligurian.

1829. Curtis. Edinb. new phil. journ., vii: 295. *Pl.* 6, *fig.* 4.
1829. " Murchison-Lyell, Tert. form. Aix, 11. *Pl.* 6, *fig.* 4.
See also Chrysomela lyelliana, Chrysomela tertiaria.

4110. Chrysomela ———. (Chrysomelidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1835. Gravenhorst. Uebers. schles. gesellsch. vaterl. cult., 1834: 92.

4111. Chrysomela ———. (Chrysomelidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1856. Menge. Progr. petrischule Danzig, 1856: 21.

4112. **Chrysomela** ——— (larva). (Chrysomelidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1856. Menge. Progr. petrischule Danzig, 1856: 23.

4113. Chrysomela ———. (Chrysomelidæ.)

Localities: Lexden, Bielbecks, England. Horizon: Peat.

1863. Wollaston. Quart. journ. geol. soc. Lond., xix, i: 401, No. 9.
1888. Bell. Entom., xxi: 2.

Chrysomela ———. See Curculio (or Chrysomela) ———.

4114. Chrysomela calami. (Chrysomelidæ.)

Compared with C. graminis L.

Locality: Oeningen, Baden. Horizon: Tortonian.

1847. Heer. Insektenf. tertiärg. Oeningen, i: 208-209. *Pl.* 7, *fig.* 8.
1852. Giebel. Deutschl. petref., 648.
1856. " Insect. d. vorwelt, 120.
1865. Heer. Urwelt der Schweiz, 361, 362, 372. *Fig.* 238 on *p.* 371.
1872. " Monde prim. Suisse, 443, 444, 456. *Fig.* 238 on *p.* 455.
1876. " Prim. world Switz., ii: 15, 16, 26. *Fig.* 238 on *p.* 27.
1879. " Urwelt der Schweiz, 2^{e} aufl., 386, 387, 397. *Fig.* 280.

4115. Chrysomela debilis. (Chrysomelidæ.)

Locality: Aix, France. Horizon: Ligurian.

1874. Oustalet. Ann. sc. géol., v, art. 2: 334-335. *Pl.* 6, *fig.* 1.

4116. Chrysomela lyelliana. (Chrysomelidæ.)

Locality: Aix, France. Horizon: Ligurian.

1856. Heer. Viert. naturf. gesellsch. Zürich, i: 26-27. *Pl.* 1, *fig.* 18.
1874. Oustalet. Ann. sc. géol. v, art. 2: 328-331. *Pl.* 5, *fig.* 14; *pl.* 6, *fig.* 2.
See also Chrysomela ——— Curtis, vi: 4, etc.

4117. Chrysomela matheroni. (Chrysomelidæ.)

Locality: Aix, France. Horizon: Ligurian.

1874. Oustalet. Ann. sc. géol., v, art. 2: 333-334. *Pl.* 6, *fig.* 3.

4118. Chrysomela matrona. (Chrysomelidæ.)

Compared with C. banksii, Europe.

Locality: Aix, France. Horizon: Ligurian.

1874. Oustalet. Ann. sc. géol., v, art. 2: 331-332. *Pl.* 5, *fig.* 13.

4119. Chrysomela punctigera. (Chrysomelidæ.)

Locality: Oeningen, Baden. Horizon: Tortonian.

1847. Heer. Insektenf. tertiärg. Oeningen, i: 209. *Pl.* 7, *fig.* 9.
1852. Giebel. Deutschl. petref., 648.
1856. " Insect. d. vorwelt, 121.

4120. Chrysomela succini. (Chrysomelidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1856. Giebel. Insect. d. vorwelt, 120.

4121. Chrysomela tertiaria. (Chrysomelidæ.)

Locality: Aix, France. Horizon: Ligurian.

1856. Giebel. Insect. d. vorwelt, 121.
See also Chrysomela ——— Curtis, vi: 4, etc.

4122. Chrysomelites ———. (Chrysomelidæ.)

Locality: Brunstatt, Alsatia. Horizon: Middle Oligocene.

1889. Foerster. Mitth. comm. geol. Elsass.-Lothr., ii: 102.

4123. Chrysomelites alaskanus. (Chrysomelidæ.)

Locality: English Bay, Alaska. Horizon: ———.

1869. Heer. Flora foss. alask. (K. svenska vetensk.-akad. handl., viii; Flora foss. arct., ii): 39. *Pl.* 10, *figs.* 6, 6*b*.

4124. **Chrysomelites fabricii.** (Chrysomelidæ.)

Locality: Atanekerdluk, North Greenland. Horizon: Miocene.

1868. Heer. Flora foss. arct., 129. *Pl.* 19, *figs.* 13–14.
1883. " Flora foss. Grönl., ii: 146.

4125. **Chrysomelites lindhageni.** (Chrysomelidæ.)

Compared with C. (Lina) tremulæ Fabr.

Localities: Ober-Atanekerdluk, Greenland; Cap Staratschin, Spitzbergen. Horizon: Miocene.

1870. Heer. K. svenska vetensk.-akad. handl., viii, No. 7: 76. *Pl.* 16, *figs.* 23*a*–*d*.
1883. " Flora foss. Grönl., ii: 145–146. *Pl.* 109, *figs.* 7, 7*b*.

4126. **Chrysomelites thulensis.** (Chrysomelidæ.)

Locality: Cap Staratschin, Spitzbergen. Horizon: Miocene.

1870. Heer. K. svenska vetensk.-akad. handl., viii, No. 7: 76. *Pl.* 16, *figs.* 25–27.

4127. **Cicindela (Odontocheila) ———.** (Cicindelidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1839. Brullé. Gisem. ins. foss., 17.

4128. **Cionus ———.** (Curculionidæ.)

Compared with C. scrophulariæ.

Locality: Aix, France. Horizon: Ligurian.

1829. Serres. Géogn. terrains tert., 223.

4129. **Cionus ———.** (Curculionidæ.)

Compared with C. verbasci.

Locality: Aix, France. Horizon: Ligurian.

1829. Serres. Géogn. terrains tert., 223, 267.

4130. **Cis ———.** (Cioidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1845. Berendt. Bernst. befindl. organ. reste vorw., i: 56.

4131. **Cis krantzi.** (Cioidæ.)

Locality: Rott, Rhenish Prussia. Horizon: Aquitanian.

1866. Heyd.-Heyd. Palaeontogr., xv: 144. *Pl.* 22, *fig.* 26.
1866. " Käfer u. polypen, 14. *Pl.* 1, *fig.* 26.

4132. **Cistela ———.** (Cistelidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1845. Berendt. Bernst. befindl. organ. reste vorw., i: 56.

4133. **Cistela dominula.** (Cistelidæ.)

Locality: (Oeningen?, Baden). Horizon: Tortonian.

1847. Heer. Insektenf. tertiärg. Oeningen, i: 160–161. *Pl.* 5, *fig.* 8.
1852. Giebel. Deutschl. petref., 650.
1856. " Insect. d. vorwelt, 112

4134. Cistelites minor. (Cistelidæ.)

Localities: Puilasok, Aumarutigsat, Greenland. Horizon: Miocene.

1874. Heer. Nachtr. mioc. flora Grönl. (K. svenska vetensk.-akad. handl., xiii; Flora foss. arct., iii): 25. *Pl.* 5, *fig.* 13.

1883. " Flora foss. Grönl., ii: 145.

4135. Cistelites punctulatus. (Cistelidæ.)

Localities: Puilasok, Atanekerdluk, Greenland. Horizon: Miocene.

1870. Heer. Phil. trans., clix (Flora foss. arct., ii): 484–485. *Pl.* 56, *figs.* 14, 14*bc*.

1874. " Nachtr. mioc. flora Grönl. (K. svenska vetensk.-akad. handl. xiii; Flora foss. arct., iii): 25. *Pl.* 5, *fig.* 12.

1883. " Flora foss. Grönl., ii: 145.

4136. Cistelites sachalinensis. (Cistelidæ.)

Locality: Mgratsch, Insel Sachalin. Horizon: Miocene.

1878. Heer. Mém. acad. imp. sc. St. Petersb., (7), xxv, vii (Prim. flora foss. sachal.; Flora foss. arct., v, iii): 3. *Pl.* 15, *figs.* 12, 12*b*.

4137. Cistelites spectabilis. (Cistelidæ.)

Locality: Oeningen, Baden. Horizon: Tortonian.

1869. Heer. Phil. trans., clix (Flora foss. arct., ii): 485. *Pl.* 56, *fig.* 13.

Citylus varius. See Cytilus varius.

Cleonis ——. See Cleonus —— Serres.

4138. Cleonolithus antiquus. (Curculionidæ.)

Locality: (Senigaglia?, Italy). Horizon: Helvetian?.

1841. Bassi. Atti reun. scienz. ital., iii: 401.

4139. Cleonus? ——. (Curculionidæ.)

Locality: Brunstatt, Alsatia. Horizon: Middle Oligocene.

1889. Foerster. Mitth. comm. geol. Elsass-Lothr., ii: 102.

4140. Cleonus ——. (Curculionidæ.)

Locality: Aix, France. Horizon: Ligurian.

1874. Heer. MSS. in Oustalet, Ann. sc. géol., v. art. 2: 235–242.

See also Brachyderes longipes, etc.

4141. Cleonus —— (7 sp.). (Curculionidæ.)

Locality: Aix, France. Horizon: Ligurian.

1829. Serres. Géogn. terrains tert., 224 (Cleonis).

4142. Cleonus —— ("No. 4.") (Curculionidæ.)

Compared with C. distincta.

Locality: Aix, France. Horizon: Ligurian.

1829. Serres. Géogn. terrains tert., 224, 272 (Cleonis). *Pl.* 5, *fig.* 9.

4143. Cleonus angusticollis. (Curculionidæ.)

Locality: Oeningen, Baden. Horizon: Tortonian.

1851. Stizenberger. Uebers. verstein. Baden, 99 (as of Heer) name only.[1]

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[1] Is it a mistake for C. leucosiæ? All Heer's other Oeningen species are properly given.

4144. Cleonus arvernensis. (Curculionidæ.)

Compared with C. albarius.

Locality: Corent, France. Horizon: Aquitanian.

1870.	Oustalet.	Ann. sc. géol., ii, art. 3: 67–68. *Pl.* 1, *figs.* 5, 6.

4145. Cleonus asperulus. (Curculionidæ.)

Locality: Aix, France. Horizon: Ligurian.

1856.	Heer.	Viert. naturf. gesellsch. Zürich, i: 20. *Pl.* 1, *fig.* 15.
1874.	Oustalet.	Ann. sc. géol., v, art. 2: 259–263. *Pl.* 3, *figs.* 20, 21.

4146. Cleonus deucalionis. (Curculionidæ.)

Locality: Oeningen, Baden. Horizon: Tortonian.

1847.	Heer.	Insektenf. tertiärg. Oeningen, i: 187. *Pl.* 6, *fig.* 12.
1852.	Giebel.	Deutschl. petref., 649.
1856.	"	Insect. d. vorwelt, 142.

4147. Cleonus fouilhouxii. (Curculionidæ.)

Locality: Corent, France. Horizon: Aquitanian.

1870.	Oustalet.	Ann. sc. géol., ii, art. 3: 68–69. *Pl.* 1, *fig.* 7.

4148. Cleonus inflexus. (Curculionidæ.)

Locality: Aix, France. Horizon: Ligurian.

1874.	Heer.	MSS.
1874.	Oustalet.	Ann. sc. géol., v, art. 2: 263–265. *Pl.* 3, *fig.* 14.

4149. Cleonus larinoides. (Curculionidæ.)

Locality: Oeningen, Baden. Horizon: Tortonian.

1847.	Heer.	Insektenf. tertiärg. Oeningen, i: 183–186. *Pl.* 6, *fig.* 15.
1852.	Giebel.	Deutschl. petref., 649.
1856.	"	Insect. d. vorwelt, 142.

4150. Cleonus leucosiæ. (Curculionidæ.)

Localities: (Oeningen ?, Baden); Aix, France. Horizons: Tortonian, Ligurian.

1847.	Heer.	Insektenf. tertiärg. Oeningen, i: 188–189. *Pl.* 8, *fig.* 8.
1852.	Giebel.	Deutschl. petref., 649.
1856.	"	Insect. d. vorwelt, 142.
1856.	Heer.	Viert. naturf. gesellsch. Zürich, i: 20.
1874.	Oustalet.	Ann. sc. géol., v, art. 2: 254–256.

See also Cleonus angusticollis.

4151. Cleonus marcelli. (Curculionidæ.)

Locality: Aix, France. Horizon: Ligurian.

1874.	Oustalet.	Ann. sc. géol., v, art. 2: 256–259. *Pl.* 3, *fig.* 13; *pl.* 5, *fig.* 5.

4152. Cleonus polii. (Curculionidæ.)

Locality: Aix, France. Horizon: Ligurian.

1847.	Hope.	Descr. insect. foss., 5. *Pl.*, *fig.* 1.
1847.	"	Ann. accad. aspir. nat., 1847: —. *Pl.* 10, *fig.* 1.

4153. Cleonus pygmæus. (Curculionidæ.)

Locality: Aix, France. Horizon: Ligurian.

1874.	Oustalet.	Ann. sc. géol., v, art. 2: 267. *Pl.* 3, *fig.* 10

4154. Cleonus pyrrhæ. (Curculionidæ.)

Locality: Oeningen, Baden. Horizon: Tortonian.

1847. Heer. Insektenf. tertiärg. Oeningen, i: 189–190, 221–222. *Pl.* 6, *fig.* 13.
1852. Giebel. Deutschl. petref., 649.
1856. " Insect. d. vorwelt, 142–143.

4155. Cleonus sexsulcatus. (Curculionidæ.)

Locality: Aix, France. Horizon: Ligurian.

1856. Heer. Viert. naturf. gesellsch. Zürich, i: 20–21. *Pl.* 1, *fig.* 9.
1874. Oustalet. Ann. sc. géol., v, art. 2: 266. *Pl.* 3, *fig.* 16; *pl.* 4, *fig.* 9.

4156. Cleonus speciosus. (Curculionidæ.)

Compared with C. pruinosus Sch.

Locality: Oeningen, Baden. Horizon: Tortonian.

1865. Heer. Urwelt der Schweiz, 374. *Fig.* 249.
1872. " Monde prim. Suisse, 459. *Fig.* 249 on *p.* 455.
1876. " Prim. world Switz., ii: 30. *Fig.* 249 on *p.* 27.
1879. " Urwelt der Schweiz, 2ᵉ aufl., 400. *Fig.* 291 on *p.* 397.

4157. Clerus adonis. (Cleridæ.)

Compared with C. mutillarius and C. formicarius L.

Locality: Oeningen, Baden. Horizon: Tortonian.

1847. Heer. Insektenf. tertiärg. Oeningen, i: 152–154. *Pl.* 5, *fig.* 3.
1852. Giebel. Deutschl. petref., 650.
1854. Pictet. Traité de paléont., 2ᵉ éd., ii: 335. *Pl.* 40, *fig.* 15.
1856. Giebel. Insect. d. vorwelt, 45.
1865. Heer. Urwelt der Schweiz, 377.
1872. " Monde prim. Suisse, 462.
1876. " Prim. world Switz., ii: 33.
1879. " Urwelt der Schweiz, 2ᵉ aufl., 402.
1885. Scudder. Zittel, Handb. palaeont., i, th. ii: 796. *Figs.* 1030*ab*.
1886. " Zittel-Barrois, Traité de paléont., ii: 796. *Figs.* 1048*ab*.

4158. Clerus succini. (Cleridæ.)

Compared with C. formicarius, Europe.

Locality: Prussian amber. Horizon: Ligurian.

1862. Giebel. Zeitschr. gesellsch. naturw., xx: 320.

4159. Clivina ——. (Carabidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1845. Berendt. Bernst. befindl. organ. reste vorw., i: 56.

4160. Clythra carbonaria. (Chrysomelidæ.)

Locality: Salzhausen, Germany. Horizon: Miocene.

1865. Heyd.-Heyd. Palaeontogr., xiv: 33–34 (larval sack). *Pl.* 9, *fig.* 20.

4161. Clythra pandoræ. (Chrysomelidæ.)

Locality: Oeningen, Baden. Horizon: Tortonian.

1847. Heer. Insektenf. tertiärg. Oeningen, i: 214–215 (Clytra). *Pl.* 7, *fig.* 14.
1852. Giebel. Deutschl. petref., 647.
1856. " Insect. d. vorwelt, 117.

Clytra pandoræ. See Clythra pandoræ.

4162. Clytus ——. (Cerambycidæ.)

Compared with C. detritus.

Locality: Oeningen, Baden. Horizon: Tortonian.

1888. Schöberlin. Soc. entom., iii: 42.

4163. Clytus ——. (Cerambycidæ.)

Compared with C. gazella.

Locality: Oeningen, Baden. Horizon: Tortonian.

1888. Schöberlin. Soc. entom., iii: 42.

4164. Clytus leporinus. (Cerambycidæ.)

Compared with Caloclytus semipunctatus (Fabr.), Europe.

Locality: Aix, France. Horizon: Ligurian.

1874. Oustalet. Ann. sc. géol., v, art. 2: 319–321. *Pl.* 5, *fig.* 10.

4165. Clytus melancholicus. (Cerambycidæ.)

Locality: Oeningen, Baden. Horizon: Tortonian.

1847. Heer. Insektenf. tertiärg. Oeningen, i: 163–165. *Pl.* 5, *fig.* 14.
1852. Giebel. Deutschl. petref., 649.
1856. " Insect. d. vorwelt, 128.

4166. Clytus pulcher. (Cerambycidæ.)

Locality: Oeningen, Baden. Horizon: Tortonian.

1865. Heer. Urwelt der Schweiz *Fig.* 252 on *p.* 376.
1872. " Monde prim. Suisse. *Fig.* 252 on *p.* 461.
1876. " Prim. world Switz., ii. *Fig.* 252 on *p.* 32.
1879. " Urwelt der Schweiz, 2^{e} aufl. *Fig.* 294 on *p.* 402.

4167. Coccinella ——. (Coccinellidæ.)

Locality: Lexden, England. Horizon Pleistocene.

1888. Bell. Entom., xxi: 2.

4168. Coccinella ——. (Coccinellidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1845. Berendt. Bernst. befindl. organ. reste vorw., i: 56.

4169. Coccinella ——. (Coccinellidæ.)

Locality: Aix, France. Horizon: Ligurian.

1847. Hope. Trans. ent. soc. Lond., iv: 251.

4170. Coccinella ——. (Coccinellidæ.)

Locality: Oeningen, Baden. Horizon: Tortonian.

1834. Keferstein. Naturg. erdkörp., ii: 328.

4171. Coccinella ——. (Coccinellidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1856. Menge. Progr. pretrischule Danzig, 1856: 21.

4172. Coccinella —— (larva). (Coccinellidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1856. Menge. Progr. petrischule Danzig, 1856: 23.

4154. Cleonus pyrrhæ. (Curculionidæ.)

Locality: Oeningen, Baden. Horizon: Tortonian.

1847.	Heer.	Insektenf. tertiärg. Oeningen, i: 189–190, 221–222. *Pl.* 6, *fig.* 13.
1852.	Giebel.	Deutschl. petref., 649.
1856.	“	Insect. d. vorwelt, 142–143.

4155. Cleonus sexsulcatus. (Curculionidæ.)

Locality: Aix, France. Horizon: Ligurian.

1856.	Heer.	Viert. naturf. gesellsch. Zürich, i: 20–21. *Pl.* 1, *fig.* 9.
1874.	Oustalet.	Ann. sc. géol., v, art. 2: 266. *Pl.* 3, *fig.* 16; *pl.* 4, *fig.* 9.

4156. Cleonus speciosus. (Curculionidæ.)

Compared with C. pruinosus Sch.

Locality: Oeningen, Baden. Horizon: Tortonian.

1865.	Heer.	Urwelt der Schweiz, 374. *Fig.* 249.
1872.	“	Monde prim. Suisse, 459. *Fig.* 249 on *p.* 455.
1876.	“	Prim. world Switz., ii: 30. *Fig.* 249 on *p.* 27.
1879.	“	Urwelt der Schweiz, 2e aufl., 400. *Fig.* 291 on *p.* 397.

4157. Clerus adonis. (Cleridæ.)

Compared with C. mutillarius and C. formicarius L.

Locality: Oeningen, Baden. Horizon: Tortonian.

1847.	Heer.	Insektenf. tertiärg. Oeningen, i: 152–154. *Pl.* 5, *fig.* 3.
1852.	Giebel.	Deutschl. petref., 650.
1854.	Pictet.	Traité de paléont., 2e éd., ii: 335. *Pl.* 40, *fig.* 15.
1856.	Giebel.	Insect. d. vorwelt, 45.
1865.	Heer.	Urwelt der Schweiz, 377.
1872.	“	Monde prim. Suisse, 462.
1876.	“	Prim. world Switz., ii: 33.
1879.	“	Urwelt der Schweiz, 2e aufl., 402.
1885.	Scudder.	Zittel, Handb. palaeont., i, th. ii: 796. *Figs.* 1030*ab*.
1886.	“	Zittel-Barrois, Traité de paléont., ii: 796. *Figs.* 1048*ab*.

4158. Clerus succini. (Cleridæ.)

Compared with C. formicarius, Europe.

Locality: Prussian amber. Horizon: Ligurian.

1862.	Giebel.	Zeitschr. gesellsch. naturw., xx: 320.

4159. Clivina ——. (Carabidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1845.	Berendt.	Bernst. befindl. organ. reste vorw., i: 56.

4160. Clythra carbonaria. (Chrysomelidæ.)

Locality: Salzhausen, Germany. Horizon: Miocene.

1865.	Heyd.-Heyd.	Palaeontogr., xiv: 33–34 (larval sack). *Pl.* 9, *fig.* 20.

4161. Clythra pandoræ. (Chrysomelidæ.)

Locality: Oeningen, Baden. Horizon: Tortonian.

1847.	Heer.	Insektenf. tertiärg. Oeningen, i: 214–215 (Clytra). *Pl.* 7, *fig.* 14.
1852.	Giebel.	Deutschl. petref., 647.
1856.	“	Insect. d. vorwelt, 117.

Clytra pandoræ. See Clythra pandoræ.

4162. Clytus ——. (Cerambycidæ.)

Compared with C. detritus.

Locality: Oeningen, Baden. Horizon: Tortonian.

1888. Schöberlin. Soc. entom., iii: 42.

4163. Clytus ——. (Cerambycidæ.)

Compared with C. gazella.

Locality: Oeningen, Baden. Horizon: Tortonian.

1888. Schöberlin. Soc. entom., iii: 42.

4164. Clytus leporinus. (Cerambycidæ.)

Compared with Caloclytus semipunctatus (Fabr.), Europe.

Locality: Aix, France. Horizon: Ligurian.

1874. Oustalet. Ann. sc. géol., v, art. 2: 319–321. *Pl.* 5, *fig.* 10.

4165. Clytus melancholicus. (Cerambycidæ.)

Locality: Oeningen, Baden. Horizon: Tortonian.

1847. Heer. Insektenf. tertiärg. Oeningen, i: 163–165. *Pl.* 5, *fig.* 14.
1852. Giebel. Deutschl. petref., 649.
1856. " Insect. d. vorwelt, 128.

4166. Clytus pulcher. (Cerambycidæ.)

Locality: Oeningen, Baden. Horizon: Tortonian.

1865. Heer. Urwelt der Schweiz *Fig.* 252 on *p.* 376.
1872. " Monde prim. Suisse. *Fig.* 252 on *p.* 461.
1876. " Prim. world Switz., ii. *Fig.* 252 on *p.* 32.
1879. " Urwelt der Schweiz, 2^e^ aufl. *Fig.* 294 on *p.* 402.

4167. Coccinella ——. (Coccinellidæ.)

Locality: Lexden, England. Horizon Pleistocene.

1888. Bell. Entom., xxi: 2.

4168. Coccinella ——. (Coccinellidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1845. Berendt. Bernst. befindl. organ. reste vorw., i: 56.

4169. Coccinella ——. (Coccinellidæ.)

Locality: Aix, France. Horizon: Ligurian.

1847. Hope. Trans. ent. soc. Lond., iv: 251.

4170. Coccinella ——. (Coccinellidæ.)

Locality: Oeningen, Baden. Horizon: Tortonian.

1834. Keferstein. Naturg. erdkörp., ii: 328.

4171. Coccinella ——. (Coccinellidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1856. Menge. Progr. pretrischule Danzig, 1856: 21.

4172. Coccinella —— (larva). (Coccinellidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1856. Menge. Progr. petrischule Danzig, 1856: 23.

4173. Coccinella (or Cassida) ——. (Coccinellidæ.)

Locality: Lexden, England. Horizon: Peat.

1863.	Wollaston.	Quart. journ. geol. soc. Lond., xix, i: 400, No. 1.

4174. Coccinella amabilis. (Coccinellidæ.)

Compared with C. ocellata L.

Locality: Oeningen, Baden. Horizon: Tortonian.

1865.	Heer.	Urwelt der Schweiz, 371.
1872.	"	Monde prim. Suisse, 455.
1876.	"	Prim. world Switz., ii: 26.
1879.	"	Urwelt der Schweiz, 2^e aufl., 384, 399. *Fig.* 261 on *p.* 384.

4175. Coccinella andromeda. (Coccinellidæ.)

Locality: Oeningen, Baden. Horizon: Tortonian.

1847.	Heer.	Insektenf. tertiärg. Oeningen, i: 216. *Pl.* 7, *fig.* 16.
1852.	Giebel.	Deutschl. petref., 647.
1856.	"	Insect. d. vorwelt, 123.
1865.	Heer.	Urwelt der Schweiz, 371.
1872.	"	Monde prim. Suisse, 455.
1876.	"	Prim. world Switz., ii: 26.
1879.	"	Urwelt der Schweiz, 2^e aufl., 396.

4176. Coccinella antiqua. (Coccinellidæ.)

Locality: Rott, Rhenish Prussia. Horizon: Aquitanian.

1862.	Heyden.	Palaeontogr., x: 74. *Pl.* 10, *fig.* 18.

4177. Coccinella bituminosa. (Coccinellidæ.)

Locality: Rott, Rhenish Prussia. Horizon: Aquitanian.

1866.	Heyd.-Heyd.	Palaeontogr., xv: 157. *Pl.* 24, *figs.* 18, 19.
1866.	"	Käfer u. polypen, 27. *Pl.* 3, *figs.* 18, 19.

4178. Coccinella colorata. (Coccinellidæ.)

Locality: Oeningen, Baden. Horizon: Tortonian.

1865.	Heer.	Urwelt der Schweiz, 371. *Fig.* 234.
1872.	"	Monde prim. Suisse, 455. *Fig.* 234.
1876.	"	Prim. world Switz., ii: 26. *Fig.* 234 on *p.* 27.
1879.	"	Urwelt der Schweiz, 2^e aufl., 396. *Fig.* 276 on *p.* 397.

4179. Coccinella decempustulata. (Coccinellidæ.)

Locality: Oeningen, Baden. Horizon: Tortonian.

1879.	Heer.	Urwelt der Schweiz, 2^e aufl., 397. *Fig.* 260 on *p.* 384.
1885.	Scudder.	Zittel, Handb. palaeont., i, th. ii: 800. *Fig.* 1056.
1886.	"	Zittel-Barrois, Traité de paléont., ii: 801. *Fig.* 1073.
1889.	Nicholson.	Man. palæont., 3d ed., i: 601. *Fig.* 449c.

4180. Coccinella fossilis. (Coccinellidæ.)

Locality: Rott, Rhenish Prussia. Horizon: Aquitanian.

1866.	Heyd.-Heyd.	Palaeontogr., xv: 157. *Pl.* 24, *fig.* 20.
1866.	"	Käfer u. polypen, 27. *Pl.* 3, *fig.* 20.

4181. Coccinella (Sospita) haagi. (Coccinellidæ.)

Locality: Rott, Rhenish Prussia. Horizon: Aquitanian.

1866. Heyd.-Heyd. Palaeontogr., xv: 155–156 (Sospita haagi on plate). *Pl.* 24, *figs.* 15, 16.
1866. " Käfer u. polypen, 25–26 (Sospita haagi on plate). *Pl.* 3, *figs.* 15, 16.

See also Sospita haagi.

4182. Coccinella hesione. (Coccinellidæ.)

Compared with C. dispar, C. bipunctata.

Locality: Oeningen, Baden. Horizon: Tortonian.

1847. Heer. Insektenf. tertiärg. Oeningen, i: 216–217. *Pl.* 7, *fig.* 17.
1852. Giebel. Deutschl. petref., 647.
1856. " Insect. d. vorwelt, 123.
1865. Heer. Urwelt der Schweiz, 371.
1872. " Monde prim. Suisse, 455.
1876. " Prim. world Switz., ii: 26.
1879. " Urwelt der Schweiz, 2e aufl., 396.

4183. Coccinella kraantzi. (Coccinellidæ.)

Locality: Rott, Rhenish Prussia. Horizon: Aquitanian.

1866. Heyd.-Heyd. Palaeontogr., xv: 156. *Pl.* 24, *fig.* 17.
1866. " Käfer u. polypen, 26. *Pl.* 3, *fig.* 17.

4184. Coccinella perses. (Coccinellidæ.)

Locality: Oeningen, Baden. Horizon: Tortonian.

1847. Heer. Insektenf. tertiärg. Oeningen, i: 217–218. *Pl.* 8, *fig.* 11.
1852. Giebel. Deutschl. petref., 647.
1856. " Insect. d. vorwelt, 123.

4185. Coccinella protogeæ. (Coccinellidæ.)

Locality: Vicinity Bonn, Rhenish Prussia. Horizon: Aquitanian ?.

1837. Germar. Fauna insect. Europæ, xix: 15. *Pl.* 15.
1852. Giebel. Deutschl. petref., 647.

See also Escheria protogeæ.

4186. Coccinella spectabilis. (Coccinellidæ.)

Compared with C. marginata, Brazil.

Locality: Oeningen, Baden. Horizon: Tortonian.

1865. Heer. Urwelt der Schweiz, 371. *Fig.* 235.
1872. " Monde prim. Suisse, 455. *Fig.* 235.
1876. " Prim. world Switz., ii: 26. *Fig.* 235 on *p.* 27.
1879. " Urwelt der Schweiz, 2e aufl., 396. *Fig.* 277 on *p.* 397.

4187. Cœliodes primigenius. (Curculionidæ.)

Locality: Aix, France. Horizon: Ligurian.

1874. Oustalet. Ann. sc. geol., v, art. 2: 302–303. *Pl.* 6, *fig.* 11.

See also Apion primigenius.

4188. Colasposoma ——. (Chrysomelidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1868. Smith. Quart. journ. sc., v: 184 (Calasposoma). *Pl.*, *fig.* 8.

4189. Colydium ——. (Colydiidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1845. Berendt. Bernst. befindl. organ. reste vorw., i: 56.

4190. Colymbetes ——. (Dytiscidæ.)

Compared with C. striatus.

Locality: Aix, France. Horizon: Ligurian.

1847. Hope. Trans. ent. soc. Lond., iv: 250.

4191. Colymbetes (Cymatopterus) æmulus. (Dytiscidæ.)

Locality: Oeningen, Baden. Horizon: Tortonian.

1862. Heer. Verhandl. holl. maatsch. wetensch. Haarl., xvi: 41–42. *Pl.* 2, *figs.* 16–19.

4192. Colymbetes striatus (recent). (Dytiscidæ.)

Locality: Hösbach, Bavaria. Horizon: Lower Pleistocene.

[1758. Linné. Syst. nat., i, 2: 665.]
1884. Flach. Käfer unterpleist. Hösbach, 8.
1884. " Verhandl. physik.-med. gesellsch. Würzb., n. f., xviii: 292.

4193. Colymbetes ungeri. (Dytiscidæ.)

Locality: Radoboj, Croatia. Horizon: Mayencian.

1847. Heer. Insektenf. tertiärg. Oeningen, i: 27–28. *Pl.* 1, *fig.* 8.
1852. Giebel. Deutschl. petref., 654.
1856. " Insect. d. vorwelt, 58.

Compsidia nephele. See Saperda (Compsidia) nephele.

4194. Coniatus minusculus. (Curculionidæ.)

Locality: Aix, France. Horizon: Ligurian.

1874. Oustalet. Ann. sc. géol., v, art. 2: 286–287. *Pl.* 3, *figs.* 17, 17*a*.

4195. Copris druidum. (Scarabæidæ.)

Compared with C. ciliata, Brazil.

Locality: Oeningen, Baden. Horizon: Tortonian.

1862. Heer. Verhandl. holl. maatsch. wetensch. Haarl., xvi: 73–74. *Pl.* 6, *figs.* 3, 3*bc*.
1865. " Urwelt der Schweiz, 379. *Fig.* 267 on *p.* 378.
1872. " Monde prim. Suisse, 465. *Fig.* 267 on *p.* 463.
1876. " Prim. world Switz., ii: 36. *Fig.* 267 on *p.* 34.
1879. " Urwelt der Schweiz, 2e aufl., 405. *Fig.* 309 on *p.* 404.

4196. Copris lunaris (recent). (Scarabæidæ.)

Locality: Mundesley, England. Horizon: Pliocene.

[1758. Linné. Syst. nat., i, 2: 543.]
1840. Curtis. Lyell, Proc. geol. soc. Lond., iii: 175.
1843. Morris. Catal. Brit. foss., 69.
1854. " Catal. Brit. foss., 2d ed., 117.
1885. Scudder. Zittel, Handb. palaeont., i, th. ii: 795.
1886. " Zittel-Barrois, Traité de paléont., ii: 795.
1886. " Bull. U. S. geol. surv., No. 31: 74.
1888. Bell. Entom., xxi: 2.

4197. Copris subterranea. (Scarabæidæ.)

Compared with C. lunaris.

Locality: Oeningen, Baden. Horizon: Tortonian.

1862.	Heer.	Verhandl. holl. maatsch. wetensch. Haarl., xvi: 74. *Pl.* 6, *fig.* 4.
1865.	"	Urwelt der Schweiz, 379.
1872.	"	Monde prim. Suisse, 465.
1876.	"	Prim. world Switz., ii: 36.
1879.	"	Urwelt der Schweiz, 2e aufl., 405.

4198. Coprologus gracilis. (Scarabæidæ.)

Locality: Oeningen, Baden. Horizon: Tortonian.

1847.	Heer.	Insektenf. tertiärg. Oeningen, i: 60–62. *Pl.* 2, *fig.* 11.
1852.	Giebel.	Deutschl. petref., 653 (Caprologus).
1853–'56.	Bronn.	Lethæa geogn., 3e aufl., iii: 648. *Pl.* 42', *figs.* 25*ab*.
1856.	Giebel.	Insect. d. vorwelt, 35.
1865.	Heer.	Urwelt der Schweiz, 379.
1872.	"	Monde prim. Suisse, 465.
1876.	"	Prim. world Switz., ii: 36.
1879.	"	Urwelt der Schweiz, 2e aufl., 405.

4199. Corticaria melanophthalma. (Lathridiidæ.)

Locality: Aix, France. Horizon: Ligurian.

1856.	Heer.	Viert. naturf. gesellsch. Zürich, i: 18–19. *Pl.* 1, *fig.* 7.
1874.	Oustalet.	Ann. sc. géol., v, art. 2: 187–188. *Pl.* 6, *fig.* 17.

4200. Corymbites sutor. (Elateridæ.)

Compared with C. æneus (Linn.), Europe.

Locality: Oeningen, Baden. Horizon: Tortonian.

1861.	Heer.	Rech. climat pays tert., 204 (undescr.).

4201. Corymbites velatus. (Elateridæ.)

Compared with C. splendens.

Locality: Green River, Wyo. Horizon: Oligocene.

1876.	Scudder.	Bull. U. S. geol. surv. terr., ii: 81.
1878.	"	Bull. U. S. geol. surv. terr., iv: 762.
1890.	"	Tert. ins. N. A., 496.

4202. Corynetes ———. (Cleridæ.)

Locality: Prussian amber. Horizon: Ligurian.

1845.	Berendt.	Bernst. befindl. organ. reste vorw., i: 56.

4203. Cossonus marionii. (Calandridæ.)

Locality: Aix, France. Horizon: Ligurian.

1874.	Oustalet.	Ann. sc. géol., v, art. 2: 305–306. *Pl.* 2, *fig.* 19; *pl.* 5, *fig.* 9.

4204. Cossonus meriani. (Calandridæ.)

Locality: Oeningen, Baden. Horizon: Tortonian.

1847.	Heer.	Insektenf. tertiärg. Oeningen. i: 196–198. *Pl.* 7, *fig.* 2.
1852.	Giebel.	Deutschl. petref., 648.
1856.	"	Insect. d. vorwelt, 145.

4205. Cossonus spielbergii. (Calandridæ.)

Locality: Oeningen, Baden. Horizon: Tortonian.

1847. Heer. Insektenf. tertiärg. Oeningen, i: 198–199. *Pl.* 7, *fig.* 3.
1852. Giebel. Deutschl. petref., 648.
1856. " Insect. d. vorwelt, 145.

4206. Cossyphus (or Cassida) ———. (Tenebrionidæ.)

Locality: Lexden. England. Horizon: Peat.

1863. Wollaston. Quart. journ. geol. soc. Lond., xix, i: 401, No. 5.
1888. Bell. Entom., xxi: 2.

4207. Cratoparis elusus. (Anthribidæ.)

Compared with C. lunatus Fahr.

Locality: Green River, Wyo. Horizon: Oligocene.

1878. Scudder. Bull. U. S. geol. surv. terr., iv: 768–769.
1890. " Tert. ins. N. A., 467. *Pl.* 8, *fig.* 40.

4208. Cratoparis repertus. (Anthribidæ.)

Compared with C. lunatus Fahr.

Locality: Green River, Wyo. Horizon: Oligocene.

1878. Scudder. Bull. U. S. geol surv. terr., iv: 768.
1890. " Tert. ins. N. A., 466–467. *Pl.* 8, *fig.* 4.

4209. Criocerina pristina. (Chrysomelidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1813. Germar. Germ., Mag. entom., i: 14.
See also Crioceris pristina.

4210. Crioceris ———. (Chrysomelidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1832. Burmeister. Handb. ent., i: 635.
1836. " Man. ent., 577.

4211. Crioceris ———. (Chrysomelidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1856. Menge. Progr. petrischule Danzig, 1856: 21.

4212. Crioceris margarum. (Chrysomelidæ.)

Locality: Aix, France. Horizon: Ligurian.

1874. Oustalet. Ann. sc. géol., v, art. 2: 324–325. *Pl.* 5, *fig.* 11.

4213. Crioceris pristina. (Chrysomelidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1856. Giebel. Insect. d. vorwelt, 116.
See also Criocerina pristina.

4214. Cryptocephalus ———. (Chrysomelidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1856. Menge. Progr. petrischule Danzig, 1856: 21.

4215. Cryptocephalus vetustus. (Chrysomelidæ.)

Compared with C. venustus Fabr.

Locality: Green River, Wyo. Horizon: Oligocene.

1878. Scudder. Bull. U. S. geol. surv. terr., iv: 764.
1890. " Tert. ins. N. A., 485–486. *Pl.* 7, *figs.* 29, 37.

4216. Cryptohypnus ———. (Elateridæ.)

Locality: Prussian amber. Horizon: Ligurian.

1845. Berendt. Bernst. befindl. organ. reste vorw., i: 56.

4217. Cryptohypnus ? terrestris. (Elateridæ.)

Compared with C. planatus LeC.

Locality: Nicola River, British Columbia. Horizon: ———.

1879. Scudder. Rep. progr. geol. surv. Can., 1877–'78: B 181–182.
1879. " Insect. tert. Nicola, 6–7.
1890. " Tert. ins. N. A., 497. *Pl.* 2, *fig.* 30.

4218. Cryptophagus ———. (Cryptophagidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1845. Berendt. Bernst. befindl. organ. reste vorw., i: 56.

4219. Cryptorhynchus ———. (Curculionidæ.)

Locality: Brunstatt, Alsatia. Horizon: Middle Oligocene.

1889. Foerster. Mitth. comm. geol. Elsass-Lothr., ii: 102.

4220. Cryptorhynchus annosus. (Curculionidæ.)

Locality: Green River, Wyo. Horizon: Oligocene.

1876. Scudder. Bull. U. S. geol. surv. terr., ii: 86–87.
1878. " Bull. U. S. geol. surv. terr., iv: 767.
1890. " Tert. ins. N. A., 471. *Pl.* 8, *fig.* 3.

4221. Cryptorhynchus gypsi. (Curculionidæ.)

Locality: Aix, France. Horizon: Ligurian.

1874. Oustalet. Ann. sc. géol., v, art. 2: 299–300. *Pl.* 3, *fig.* 8.

4222. Cryptorhynchus renudus. (Curculionidæ.)

Locality: Rott, Rhenish Prussia. Horizon: Aquitanian.

1862. Heyden. Palaeontogr., x: 71. *Pl.* 10, *fig.* 9.

4223. Cucorhinus ? (or Strophosomus ?) ———. (Otiorhynchidæ.)

Locality: Peckham, England. Horizon: Lower Eocene, Paludina beds.

1861. Smith. Geologist, iv: 40.

4224. Cupes ———. (Cupesidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1845. Berendt. Bernst. befindl. organ. reste vorw., i: 56.

4225. Cupoides tessellatus. (Cupesidæ.)

Compared with Cupes atomaria.

Locality: Prussian amber. Horizon: Ligurian.

1856. Motschulsky. Études entom., v: 27.

4226. Curculio ——. (Curculionidæ.)

Locality: Copal. **Horizon:** Recent.

1776. Bloch. Beschäft. berl. gesellsch. naturf. freunde, ii: 189.

4227. Curculio ——. (Curculionidæ.)

Locality: Prussian amber. **Horizon:** Ligurian.

1822. Defrance. Dict. sc. nat., xxiii: 524 (charançon).

4228. Curculio? ——. (Curculionidæ.)

Locality: Schossnitz, Silesia. **Horizon:** Miocene.

1855. Göppert. Tert. flora Schossnitz. *Pl.* 26, *figs.* 56–57.

See also Curculionites silesiacus, etc.

4229. Curculio —— (larva). (Curculionidæ.)

Locality: Prussian amber. **Horizon:** Ligurian.

1856. Menge. Progr. petrischule Danzig, 1856: 23.

4230. Curculio? ——. (Curculionidæ.)

Locality: Nágpur, Central India. **Horizon:** ——.

1860. Murray. Quart. journ. geol. soc. Lond., xvi: 184–185, 189. *Pl.* 10, *fig.* 38.

4231. Curculio? ——. (Curculionidæ.)

Locality: Nágpur, Central India. **Horizon:** ——.

1860. Murray. Quart. journ. geol. soc. Lond., xvi: 185, 189. *Pl.* 10, *fig.* 69.

4232. Curculio? ——. (Curculionidæ.)

Locality: Nágpur, Central India. **Horizon:** ——.

1860. Murray. Quart. journ. geol. soc. Lond., xvi: 185, 189. *Pl.* 10, *fig.* 70.

4233. Curculio (or Chrysomela) ——. (Curculionidæ.)

Locality: Lexden, England. **Horizon:** Peat.

1863. Wollaston. Quart. journ. geol. soc. Lond., xix, i: 401, No. 3.
1888. Bell. Entom., xxi: 2.

4234. Curculio ——. (Curculionidæ.)

Locality: Gurnet Bay, Isle of Wight. **Horizon:** Bembridge Limestone.

1879. Woodward. Quart. journ. geol. soc. Lond., xxxv: 344.
1879. " Geol. mag., n. s., v: 89.

4235. Curculionites ——. (Curculionidæ.)

Locality: Brunstatt, Alsatia. **Horizon:** Middle Oligocene.

1889. Foerster. Mitth. comm. geol. Elsass-Lothr., ii: 102.

4236. Curculionites costulatus. (Curculionidæ.)

Locality: Cap Staratschin, Spitzbergen. **Horizon:** Miocene.

1870. Heer. K. svenska vetensk.-akad. handl., viii, No. vii: 76. *Pl.* 16, *figs.* 38*ab*, 39, 40.

4237. Curculionites exiguus. (Curculionidæ.)

Locality: Aix, France. **Horizon:** Ligurian.

1874. Oustalet. Ann. sc. géol., v, art. 2: 310–311. *Pl.* 4, *figs.* 10 [“16”].

4238. Curculionites lividus. (Curculionidæ.)

Locality: Aix, France. Horizon: Ligurian.

1856. Heer. Viert. naturf. gesellsch. Zürich, i: 24. *Pl.* 1, *fig.* 12.

1874. Oustalet. Ann. sc. géol., v, art. 2: 308–310. *Pl.* 6, *figs.* 8, 10.

4239. Curculionites marginatus. (Curculionidæ.)

Locality: Vicinity Corfe, England. Horizon: ———.

1854. Westwood. Proc. geol. soc. Lond., 395 (unnamed). *Pl.* 16, *fig.* 35.

1856. Giebel. Insect. d. vorwelt, 148.

4240. Curculionites morosus. (Curculionidæ.)

Locality: Aix, France. Horizon: Ligurian.

1856. Heer. Viert. naturf. gesellsch. Zürich, i: 21–55. *Pl.* 1, *fig.* 13.

See also Liparus ——— Curtis (cf. punctatus), L. primævus, Hylobius morosus.

4241. Curculionites nitidulus. (Curculionidæ.)

Locality: Cap Staratschin, Spitzbergen. Horizon: Miocene.

1870. Heer. K. svenska vetensk.-akad. handl., viii, No. vii: 77. *Pl.* 16, *figs.* 15–16.

4242. Curculionites obsoletus. (Curculionidæ.)

Locality: Oeningen, Baden. Horizon: Tortonian.

1851. Stizenberger. Uebers. verstein. Baden, 98 (as of Heer, who describes nothing of the kind).

4243. Curculionites ovatus. (Curculionidæ.)

Locality: Corent, France. Horizon: Aquitanian.

1870. Oustalet. Ann. sc. géol., ii, art. 3: 77–78. *Pl.* 1, *fig.* 12.

4244. Curculionites parvulus. (Curculionidæ.)

Locality: Aix, France. Horizon: Ligurian.

1856. Heer. Viert. naturf. gesellsch. Zürich, i: 23–24. *Pl.* 1, *fig.* 16.

1874. Oustalet. Ann. sc. géol., v, art. 2: 307–308. *Pl.* 4, *fig.* 11; *pl.* 6, *fig.* 9.

4245. Curculionites redtenbacheri. (Curculionidæ.)

Locality: Radoboj, Croatia. Horizon: Mayencian.

1847. Heer. Insektenf. tertiärg. Oeningen, i: 199–200. *Pl.* 7, *fig.* 1.

1852. Giebel. Deutschl. petref., 648.

4246. Curculionites senonicus. (Curculionidæ.)

Locality: Sahel Alma, Lebanon. Horizon: Senonian.

1888. Kolbe. Zeitschr. deutsch. geol. gesellsch., xl: 135–136. *Pl.* 11, *fig.* 8.

4247. Curculionites silesiacus. (Curculionidæ.)

Locality: Schossnitz, Silesia. Horizon: Miocene.

1869. Assmann. Beitr. insect. d. vorwelt, 41. *Pl.* 1, *figs.* 4, 4*a*.

1869. " Schles. zeitschr. f. ent., (2), i: 41. *Pl.* 1, *figs.* 4, 4*a*.

See also Curculio ——— Göppert, ——— ——— (Chrysomelidæ) Göppert.

4248. Curculionites taxodii. (Curculionidæ.)

Locality: Cap Staratschin, Spitzbergen. Horizon: Miocene.

1870. Heer. K. svenska vetensk. akad. handl., viii, No. vii: 76–77. *Pl.* 16, *figs.* 8*a*, 9.

4249. Curculionites thoracicus. (Curculionidæ.)

Locality: Cap Staratschin, Spitzbergen. **Horizon**: Miocene.

1870.	Heer.	K. svenska vetensk.-akad. handl., viii, No. vii: 77. *Pl.* 16, *figs.* 17–18.

4250. Cybister agassizi. (Dytiscidæ.)

Compared with C. limbatus F., India; C. foveatus, Mexico.

Locality: Oeningen, Baden. **Horizon**: Tortonian.

1862.	Heer.	Verhandl. holl. maatsch. wetensch. Haarl., xvi: 37–39. *Pl.* 2, *figs.* 1–10.
1865.	“	Urwelt der Schweiz, 361, 383. *Fig.* 280 on *p.* 381.
1872.	“	Monde prim. Suisse, 443, 470. *Fig.* 280 on *p.* 467.
1876.	“	Prim. world Switz., ii: 15, 40. *Fig.* 280 on *p.* 38.
1879.	“	Urwelt der Schweiz, 2ᵉ aufl., 387, 409. *Fig.* 322 on *p.* 407.

4251. Cybister atavus. (Dytiscidæ.)

Compared with C. africanus Lap., Africa and Mediterranean district.

Locality: Oeningen, Baden. **Horizon**: Tortonian.

1862.	Heer.	Verhandl. holl. maatsch. wetensch. Haarl., xvi: 39–40 (Cybistus). *Pl.* 2, *figs.* 23, 24.
1865.	“	Urwelt der Schweiz, 383.
1872.	“	Monde prim. Suisse, 470.
1876.	“	Prim. world Switz., ii: 41.
1879.	“	Urwelt der Schweiz, 2ᵉ aufl., 409.

4252. Cybister nicoleti. (Dytiscidæ.)

Compared with C. costalis Oliv.

Localities: Oeningen, Baden; Locle, Switzerland. **Horizon**: Tortonian.

1862.	Heer.	Verhandl. holl. maatsch. wetensch. Haarl., xvi: 40. *Pl.* 2, *figs.* 21, 22.
1865.	“	Urwelt der Schweiz, 383.
1872.	“	Monde prim. Suisse, 470.
1876.	“	Prim. world Switz., ii: 40.
1879.	“	Urwelt der Schweiz, 2ᵉ aufl., 409.

Cybistus atavus. See Cybister atavus.

4253. Cychrus (minor). (Carabidæ.)

Compared with C. andrewsii, United States.

Locality: Port Kennedy, Pa. **Horizon**: Postpliocene.

1876.	Horn.	Trans. Amer. entom. soc., v: 243.
1889.	Lesley.	Dict. foss. Penns., i: p. xvii.
1890.	Scudder.	Tert. ins. N. A., 537–538. *Pl.* 1, *fig.* 2.

4254. Cychrus rostratus (recent). (Carabidæ.)

Locality: Hösbach, Bavaria. **Horizon**: Lower Pleistocene.

[1746.	Linné.	Fauna suec., no. 823.]
1884.	Flach.	Käfer unterpleist. Hösbach, 3–4. *Pl.* 1, *fig.* 2.
1884.	“	Verhandl. physik.-med. gesellsch. Würzb., n. f., xviii: 287–288. *Pl.* 8, *fig.* 2.

4255. Cychrus testeus. (Carabidæ.)

Compared with C. angusticollis Fisch.

Locality: Green River, Wyo. Horizon: Oligocene.

1878. Scudder. Bull. U. S. geol. surv. terr., iv: 758–759.
See also **Neothanes testeus.**

4256. Cychrus wheatleyi. (Carabidæ.)

Compared with C. viduus, North America.

Locality: Port Kennedy, Pa. Horizon: Postpliocene.

1876. Horn. Trans. Amer. entom. soc., v: 242–243.
1889. Lesley. Dict. foss. Penns., i: p. xvii.
1890. Scudder. Tert. ins. N. A., 536–537. *Pl.* 1, *fig.* 1.

4257. Cyclonotum orbiculare (recent). (Hydrophilidæ.)

Localities: Hösbach, Bavaria; Cambridge, England. Horizon: Pleistocene.

[1775. Fabricius. Syst. ent., 229.]
1884. Flach. Käfer unterpleist. Hösbach, 9. *Pl.* 2, *fig.* 2.
1884. " Verhandl. physik.-med. gesellsch. Würzb., n. f., xviii: 293. *Pl.* 9, *fig.* 2.
1888. Bell. Entom., xxi: 2.

Cymatopterus æmulus. See Colymbetes (Cymatopterus) æmulus.

4258. Cymindis ———. (Carabidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1831. Burmeister. Oken, Isis, 1831: 1100.

4259. Cymindis aurora. (Carabidæ.)

Compared with C. americana, United States.

Locality: Port Kennedy, Pa. Horizon: Postpliocene.

1876. Horn. Trans. Amer. entom. soc., v: 243.
1889. Lesley. Dict. foss. Penns., i: p. xvii.
1890. Scudder. Tert. ins. N. A., 518. *Pl.* 1, *fig.* 6.

4260. Cymindis pulchella. (Carabidæ.)

Locality: Oeningen, Baden. Horizon: Tortonian.

1847. Heer. Insektenf. tertiärg. Oeningen, i: 13–15. *Pl.* 1, *fig.* 1.
1852. Giebel. Deutschl. petref., 655.
1856. " Insect. d. vorwelt, 69.

4261. Cymindoides sculptipennis. (Carabidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1856. Motschulsky. Études entom., v: 25–26.

4262. Cyphon ———. (Dascyllidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1845. Berendt. Bernst. befindl. organ. reste vorw., i: 56.

4263. Cyphon? ———. (Dascyllidæ.)

Locality: Rocky River, Sydney Flats, New South Wales. Horizon: ———.

1870. Moore. Quart. journ. geol. soc. Lond., xxvi: 263. *Pl.* 18, *fig.* 11.

4264. Cytilus varius (recent). (Byrrhidæ.)

Locality: Hösbach, Bavaria. Horizon: Lower Pleistocene.

[1775. Fabricius. Syst. ent., 60.]
1884. Flach. Käfer unterpleist. Hösbach, 9 (Citylus). *Pl.* 2, *fig.* 5.
1884. " Verhandl. physik.-med. gesellsch Würzb., n. f., xviii: 293. *Pl.* 9, *fig.* 5.

4265. Dascyllus cervinus (recent). (Dascyllidæ.)

Locality: Cambridge, England. Horizon: Peat.

[1758. Linné. Syst. nat., ed. 10, i: 376.]
See also Atopa cervina.

4266. Dasytes ——. (Malachidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1845. Berendt. Bernst. befindl. organ. reste vorw., i: 56.

4267. Dermestes ——. (Dermestidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1830. Berendt. Insecten. im bernstein, 30.
1845. " Bernst. befindl. organ. reste vorw., i: 56.

4268. Dermestes pauper. (Dermestidæ.)

Locality: Oeningen, Baden. Horizon: Tortonian.

1847. Heer. Insektenf. tertiärg. Oeningen, ii: 43–44. *Pl.* 1, *fig.* 11.
1852. Giebel. Deutschl. petref., 654.
1856. " Insect. d. vorwelt, 48.

4269. Dermestes typographus. (Dermestidæ.)

Locality: Copal. Horizon: Recent.

1776. Bloch. Beschäft. berl. gesellsch. naturf. freunde, ii: 175. *Pl.* 4, *fig.* 14.

4270. Diacanthus sutor. (Elateridæ.)

Locality: Oeningen, Baden. Horizon: Tortonian.

1847. Heer. Insektenf. tertiärg. Oeningen, i: 136–137. *Pl.* 4, *fig.* 5.
1852. Giebel. Deutschl. petref., 651.
1856. " Insect. d. vorwelt, 95.

4271. Dicælus ——. (Carabidæ.)

Compared with D. elongatus, United States.

Locality: Port Kennedy, Pa. Horizon: Postpliocene.

1876. Horn. Trans. Amer. entom. soc., v: 244.
1890. Scudder. Tert. ins. N. A., 525. *Pl.* 1, *fig.* 15.

4272. Dicælus alutaceus. (Carabidæ.)

Compared with D. dilatatus, United States.

Locality: Port Kennedy, Pa. Horizon: Postpliocene.

1876. Horn. Trans. Amer. entom. soc., v: 244.
1889. Lesley. Dict. foss. Penns., i: p. xix.
1890. Scudder. Tert. ins. N. A., 524. *Pl.* 1, *figs.* 8–10.

4273. Dicerca bronni. (Buprestidæ.)

Locality: Rott, Rhenish Prussia. Horizon: Aquitanian.

1859. Heyden. Palaeontogr., viii: 4–6. *Pl.* 2, *figs.* 2, 3.

4274. Dicerca carbonum. (Buprestidæ.)

Locality: Bonn, Rhenish Prussia. Horizon: Aquitanian?.

1847. Heer. Insektenf. tertiärg. Oeningen, i: 117.
1856. Giebel. Insect. d. vorwelt, 85.

See also Buprestis carbonum, etc.

4275. Dicerca prisca. (Buprestidæ.)

Locality: Oeningen, Baden. Horizon: Tortonian.

1847. Heer. Insektenf. tertiärg. Oeningen, i: 114–117. *Pl.* 3, *fig.* 11.
1852. Giebel. Deutschl. petref., 652.
1856. " Insect. d. vorwelt, 86.

4276. Dicerca reticulata. (Buprestidæ.)

Locality: Naumburg, Prussia. Horizon: Oligocene.

1869. Assmann. Beitr. insect. d. vorwelt, 60–61. *Figs.* 1*a*, *b*.
1869. " Schles. zeitschr. f. ent., (2), i: 60–61. *Figs.* 1*a*, *b*.

4277. Dicerca taschei. (Buprestidæ.)

Locality: Salzhausen, Germany. Horizon: Miocene.

1856. Heyden. Palaeontogr., iv: 198–199. *Pl.* 37, *figs.* 1–4.
1862. " Palaeontogr., x: 67–68.

4278. Dichirotrichus lividus. (Carabidæ.)

Locality: Oeningen, Baden. Horizon: Tortonian.

1862. Heer. Verhandl. holl. maatsch. wetensch. Haarl., xvi: 29–31. *Pl.* 1, *fig.* 18.

4279. Dineutes insignis. (Gyrinidæ.)

Compared with D. americanus (Fabr.).

Locality: Oeningen, Baden. Horizon: Tortonian.

1561. Heer. Rech. climat pays tert., 203 (Dineutus) (undescr.).
1862. " Verhandl. holl. maatsch. wetensch. Haarl., xvi: 43–44 (wrong ref. in text to pl. and wrong name on pl.). *Pl.* 2, *figs.* 27, 28.
1885. Scudder. Zittel, Handb. palaeont., i, th. ii (wrongly called D. longiventris in text). *Fig.* 1066.
1886. " Zittel-Barrois, Traité de paléont., ii (as above). *Fig.* 1083.

See also Dineutes longiventris.

4280. Dineutes longiventris. (Gyrinidæ.)

Locality: Oeningen, Baden. Horizon: Tortonian.

1862. Heer. Verhandl. holl. maatsch. wetensch. Haarl., xvi: 44 (Dineutus). *Pl.* 2, *figs.* 25, 26.
1865. " Urwelt der Schweiz. *Fig.* 281 on *p.* 381.
1872. " Monde prim. Suisse. *Fig.* 281 on *p.* 467.
1876. " Prim. world Switz., ii. *Fig.* 281 on *p.* 38.
1879. " Urwelt der Schweiz, 2^e aufl. *Fig.* 323 on *p.* 407.
1885. Scudder. Zittel, Handb. palaeont., i, th. ii: 802 (the fig. belongs to D. insignis).
1886. " Zittel-Barrois, Traité de paléont., ii: 803 (as above).

See also Dineutes insignis.

Dineutus ——— (several species). See Dineutes, the same species.

4281. Diplochila ? henshawi. (Carabidæ.)

Compared with D. major, Southern United States.

Locality: Florissant, Colo. Horizon: Oligocene.

1890. Scudder. Tert. ins. N. A., 523–524. *Pl.* 28, *fig.* 9.

4282. Donacia ——— (2 sp.). (Chrysomelidæ.)

Locality: Mundesley, England. Horizon: Pliocene.

1840. Curtis. Lyell, Proc. geol. soc. Lond., iii: 175.

4283. Donacia ———. (Chrysomelidæ.)

Locality: Flanders. Horizon: Postglacial.

1873. Debray. Mém. soc. sc. agric. arts Lille, (3), xi: 451.
1874. " Bull. soc. géol. France, (3), ii: 48.

4284. Donacia ———. (Chrysomelidæ.)

Locality: Villechetif, Vannes, France. Horizon: Pleistocene.

1876. Fliche. Comptes rendus, lxxxii: 979.

4285. Donacia ———. (Chrysomelidæ.)

Locality: Brunstatt, Alsatia. Horizon: Middle Oligocene.

1890. Foerster. In litt.

4286. Donacia ———. (Chrysomelidæ.)

Locality: Nykerk, Holland. Horizon: Peat.

1885. Früh. Jahrb. k. k. geol. reichsanst., xxxv: 679.

Donacia appendiculata. See Donacia reticulata.

4287. Donacia bidens (recent). **(Chrysomelidæ.)**

Locality: Leffe, Val Gandino, Italy. Horizon: Quaternary.

[1791. Olivier. Encycl. méth., vi: 291.]
1881. Malfatti. Atti soc. ital. sc. nat., xxiv: 91.
1881. " Bibl. ins. foss. ital., 3.

Donacia clavipes. See Donacia menyanthidis.

4288. Donacia crassipes (recent). **(Chrysomelidæ.)**

Localities: Vannes, France; Mundesley, England. Horizon: Pleistocene.

[1775. Fabricius. Syst. ent., 195.]
1875. Fliche. Comptes rendus, lxxx: 979.
1888. Bell. Entom., xxi: 2.

4289. Donacia discolor (recent) (1). **(Chrysomelidæ.)**

Locality: Hösbach, Bavaria. Horizon: Lower Pleistocene.

[1795. Panzer. Ent. germ., 216 (nec Gyll.).]
1884. Flach. Käfer unterpleist. Hösbach, 11. *Pl.* 2, *fig.* 14.
1884. " Verhandl. physik.-med. gesellsch. Würzb., n. f., xviii: 295. *Pl.* 9, *fig.* 14.

4290. Donacia discolor (recent) (2). (Chrysomelidæ.)

Localities: Dürnten, Utznach, Lausanne, Switzerland; Chambéry, La Boisse, France; Leffe, Italy. Horizon: Quaternary.

[1813.	Gyllenhal.	Ins. suec., iii: 660 (nec Panz.).]
1865.	Heer.	Urwelt der Schweiz, 500, 502. *Figs.* 353–355 on *p.* 501.
1872.	"	Monde prim. Suisse, 614, 616. *Figs.* 353–355.
1876.	"	Prim. world Switz., ii: 167. *Figs.* 353–355 on *p.* 168.
1876.	"	Bull. soc. vaud. sc. nat., xiv: 457.
1876.	Lart.-Chantr.	Arch. mus. hist. nat. Lyon, i: 104.
1879.	Heer.	Urwelt der Schweiz, 2e aufl., 530, 532, 533. *Figs.* 396–398 on *p.* 531.
1882.	Sordelli.	Alc. insetti foss. Lomb., 6–9. *Fig.*
1882.	"	Bull. soc. ent. ital., xiv: 230–233. *Fig.*

4291. Donacia fennica (recent). (Chrysomelidæ.)

Locality: Hösbach, Bavaria. Horizon: Lower Pleistocene.

[1800.	Paykull.	Faun. suec., iii: 70.]
1884.	Flach.	Käfer unterpleist. Hösbach, 11.
1884.	"	Verhandl. physik.-med. gesellsch. Würzb., n. f., xviii: 295.

4292. Donacia genini. (Chrysomelidæ.)

Compared with D. violacea Fabr., D. nigra Latr.

Locality: Sonnaz, Savoy, France. Horizon: Quaternary?

1850.	Mortillet.	"Bull. soc. hist. nat. Savoie, 1850: 135."
1850.	"	"Les Alpes, 1850, No. 5."
1850.	"	Arch. sc. phys. et nat., xv: 78–79 (genin).

4293. Donacia letzneri. (Chrysomelidæ.)

Locality: Schossnitz, Silesia. Horizon: Miocene.

1869.	Assmann.	Beitr. insect. d. vorwelt, 42–43. *Pl.* 1, *figs.* 5, 5*a*.
1869.	"	Schles. zeitschr. f. ent., (2), i: 42–43. *Pl.* 1, *figs.* 5, 5*a*.

4294. Donacia lignitum. (Chrysomelidæ.)

Compared with D. sericea.

Locality: Leffe, Italy. Horizon: Quaternary.

1882.	Sordelli.	Alc. insetti foss. Lomb., 9–10. *Fig.* on *p.* 8.
1882.	"	Bull. soc. ent. ital., xiv: 233–234. *Fig.* on *p.* 232.

4295. Donacia linearis (recent). (Chrysomelidæ.)

Locality: Norfolk forest, Mundesley, England. Horizon: Pleistocene.

[1795.	Hoppe.	Enum. ins. Erlang., 46. *Fig.* 10.]
1888.	Bell.	Entom., xxi: 2.

See also Donacia simplex.

4296. Donacia menyanthidis (recent). (Chrysomelidæ.)

Localities: Chambéry, La Boisse, Savoy, France. Horizon: Quaternary?

[1792.	Fabricius.	Ent. sys., i, ii: 117 (= clavipes).]
1865.	Heer.	Urwelt der Schweiz, 502.
1872.	"	Monde prim. Suisse, 616.
1876.	"	Prim. world Switz., ii: 170.
1876.	Lart.-Chantr.	Arch. mus. hist. nat. Lyon, i: 104 (as of Mortillet).
1879.	Heer.	Urwelt der Schweiz, 2e aufl., 532.

4297. Donacia obscura (recent). (Chrysomelidæ.)

Locality: Hösbach, Bavaria. Horizon: Lower Pleistocene.

[1813. Gyllenhal. Ins. suec., iii: 654.]
1884. Flach. Käfer unterpleist. Hösbach, 11.
1884. " Verhandl. physik.-med. gesellsch. Würzb., n. f., xviii: 295.

4298. Donacia palæmonis. (Chrysomelidæ.)

Locality: Oeningen, Baden. Horizon: Tortonian.

1847. Heer. Insektenf. tertiärg. Oeningen, i: 200–202. *Pl.* 6, *fig.* 4.
1852. Giebel. Deutschl. petref., 648.
1856. " Insect. d. vorwelt, 116.
1865. Heer. Urwelt der Schweiz, 362.
1872. " Monde prim. Suisse, 444.
1876. " Prim. world Switz., ii: 16.
1879. " Urwelt der Schweiz, 2e aufl., 388.

4299. Donacia parvula. (Chrysomelidæ.)

Locality: Cap Staratschin, Spitzbergen. Horizon: Miocene.

1870. Heer. K. svenska vetensk.-akad. handl., viii, No. vii: 75–76. *Pl.* 16, *figs.* 32–33.

4300. Donacia pompatica. (Chrysomelidæ.)

Compared with D. pubicollis Suffr.

Locality: Scarboro', Ontario. Horizon: Postpliocene.

1890. Scudder. Tert. ins. N. A., 486–487. *Pl.* 1, *figs.* 33, 34.

4301. Donacia reticulata (recent). (Chrysomelidæ.)

Locality: Leffe, Val Gandino, Italy. Horizon: Quaternary marl.

[1817. Gyllenhal. Schönh., Syn. ins., App. iii: 37 (= appendiculata).]
1881. Malfatti. Atti soc. ital. sc. nat., xxiv: 91.
1881. " Bibl. insetti foss. ital., 3.

4302. Donacia sagittariæ (recent). (Chrysomelidæ.)

Localities: Leffe, Italy; Hösbach, Bavaria. Horizon: Pleistocene.

[1792. Fabricius. Ent. syst., i, ii: 117.]
1882. Sordelli. Alc. insetti foss. Lomb., 6–9. *Fig.*
1882. " Bull. soc. ent. ital., xiv: 230–233. *Fig.*
1884. Flach. Käfer unterpleist. Hösbach, 11. *Pl.* 2, *fig.* 12.
1884. " Verhandl. physik.-med. gesellsch. Würzb., n. f., xviii: 295. *Pl.* 9, *fig.* 12.

4303. Donacia sericea (recent). (Chrysomelidæ.)

Localities: Dürnten, Schwerzenbach, Ardres, Switzerland; Hösbach, Bavaria; Mundesley, England. Horizon: Pleistocene.

[1761. Linné. Faun. suec., 196.]
1858. Heer. Arch. sc. phys. et nat., n. p., ii: 322.
1865. " Urwelt der Schweiz, 500–501. *Fig.* 352.
1872. " Monde prim. Suisse, 614–615. *Fig.* 352.
1876. " Prim. world Switz., ii: 167. *Fig.* 352 on *p.* 168.
1878. Debray. Ann. soc. géol. nord, v: 127.
1879. Heer. Urwelt der Schweiz, 2e aufl., 530, 531. *Fig.* 395 on *p.* 531.
1884. Flach. Käfer unterpleist. Hösbach, 11.
1884. " Verhandl. physik.-med. gesellsch. Würzb., n. f., xviii: 295.
1888. Bell. Entom., xxi: 2.

4304. Donacia simplex (recent). (Chrysomelidæ.)

Locality: England. Horizon: Pleistocene.

[1775. Fabricius. Syst. ent., 195.]
See also Donacia linearis.

4305. Donacia smittiana. (Chrysomelidæ.)

Locality: Cap Staratschin, Spitzbergen. Horizon: Miocene.

1870. Heer. K. svenska vetensk.-akad. handl., viii, No. vii: 76. *Pl.* 16, *figs.* 30–31.

4306. Donacia stiria. (Chrysomelidæ.)

Compared with D. porosicollis Lac.

Locality: Scarboro', Ontario. Horizon: Postpliocene.

1890. Scudder. Tert. ins. N. A., 486. *Pl.* 1, *fig.* 28.

4307. Donacia thalassina (recent.) (Chrysomelidæ.)

Locality: Hösbach, Bavaria. Horizon: Lower Pleistocene.

[1811. Germar. Neue schrift. gesellsch. Halle, i, vi: 29.]
1884. Flach. Käfer unterpleist. Hösbach, 11. *Pl.* 2, *fig.* 13.
1884. " Verhandl. physik.-med. gesellsch. Würzb., n. f., xviii: 295. *Pl.* 9, *fig.* 13.

4308. Dorcadion emeritum. (Cerambycidæ.)

Locality: Rott, Rhenish Prussia. Horizon: Aquitanian.

1862. Heyden. Palaeontogr., x: 71–72. *Pl.* 10, *fig.* 14.

4309. Dorcadionoides subæneus. (Cerambycidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1856. Motschulsky. Études entom., v: 27.

4310. Dorcasoides bilobus. (Lucanidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1856. Motschulsky. Études entom., v: 27 (in the pl. called nigrescens, by confusion probably with Scydmænoides nigrescens). *Pl.*, *fig.* 1.
1885. Scudder. Zittel, Handb. palaeont., i, th. ii: 795. *Fig.* 1028.
1886. " Zittel-Barrois, Traité de paléont., ii: 795. *Fig.* 1046.

Dorcasoides nigrescens. See Dorcasoides bilobus.

4311. Dorcatoma ———. (Ptinidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1845. Berendt. Bernst. befindl. organ. reste vorw., i: 56.

4312. Dorcatoma ———. (Ptinidæ.)

Locality: Brunstatt, Alsatia. Horizon: Middle Oligocene.

1890. Foerster. In litt.

4313. Dorcatoma ———. (Ptinidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1856. Menge. Progr. petrischule Danzig, 1856: 21.

4314. Dorcus ———. (Lucanidæ.)

Locality: Gurnet Bay, Isle of Wight. Horizon: Bembridge Limestone.

1879. **Woodward.** Quart. journ. geol. soc. Lond., xxxv: 344.
1879. " Geol. mag., n. s., v: 89.

4315. Dorcus (Eurytrachelus) primigenius. (Lucanidæ.)

Compared with E. saiga and E. platymelus.

Locality: Kutschlin, Bohemia. Horizon: Miocene.

1881. **Deichmüller.** Foss. ins. diatomeensch. Kutschlin, 11. *Pl.* 21, *figs.* 1*ab*.
1881. " Verhandl. leop.-carol. akad. naturf., xlii: 303. *Pl.* 21, *figs.* 1*ab*.

Doritomus ———. See Dorytomus ——— Keferst.

4316. Dorytomus ———. (Curculionidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1834. **Keferstein.** Naturg. erdkörp., ii: 330 (Doritomus).

4317. Dorytomus ———. (Curculionidæ.)

Locality: Aix, France. Horizon: Ligurian.

1829. **Serres.** Géogn. terrains tert., 224.

4318. Dromius ———. (Carabidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1845. **Berendt.** Bernst. befindl. organ. reste vorw., i: 56.
1845. **Motschulsky.** Bull. soc. imp. nat. Mosc., xviii, ii: 98.

4319. Dromius ———. (Carabidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1832. **Burmeister.** Handb. ent., i: 635.
1836. " Man. ent., 576.

4320. Dromius ———. (Carabidæ.)

Compared with D. agilis.

Locality: Prussian amber. Horizon: Ligurian.

1856. **Menge.** Progr. petrischule Danzig, 1856: 23.

4321. Dromius ———. (Carabidæ.)

Compared with D. quadrimaculatus.

Locality: Prussian amber. Horizon: Ligurian.

1856. **Menge.** Progr. petrischule Danzig, 1856: 23.

4322. Dromius resinatus. (Carabidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1856. **Giebel.** Insect. d. vorwelt, 70.
See also Lebina resinata.

4323. Dryocætes carbonarius. (Scolytidæ.)

Locality: Green River, Wyo. Horizon: Oligocene.

1878. **Scudder.** Bull. U. S. geol. surv. terr., iv: 768.
1890. " Tert. ins. N. A., 470–471. *Pl.* 8, *fig.* 6.

4324. **Dryocætes impressus.** (Scolytidæ.)

Compared with D. affaber (Mann.).

Locality: Green River, Wyo. Horizon: Oligocene.

1878. Scudder. Bull. U. S. geol. surv. terr., iv : 767–768.
1890. " Tert. ins. N. A., 470. *Pl.* 8, *fig.* 28.
See also Trypodendron impressum.

Dyticus ——. See Dytiscus —— Germ.

4325. **Dytiscus** ——. (Dytiscidæ.)

Locality: Crofthead in Glasgow, Scotland. Horizon: Pleistocene.

1888. Bell. Entom., xxi : 2.

4326. **Dytiscus** —— (larva). (Dytiscidæ.)

Locality: Vicinity Bonn, Rhenish Prussia. Horizon: Aquitanian?.

1837. Germar. Fauna insect. Europæ, xix : 1 (Dyticus). *Pl.* 1.
1852. Giebel. Deutschl. petref., 655.
1856. " Insect. d. vorwelt, 58.

4327. **Dytiscus** ——. (Dytiscidæ.)

Locality: Rhine, Germany. Horizon: Aquitanian ?.

1831. Goldfuss. Verhandl. leop.-carol. akad. naturf., vii, i : 118.

4328. **Dytiscus** ——. (Dytiscidæ.)

Compared with D. cinereus.

Locality: Aix, France. Horizon: Ligurian.

1829. Serres. Géogn. terrains tert., 221.

4329. **Dytiscus** ——. (Dytiscidæ.)

Locality: Gurnet Bay, Isle of Wight. Horizon: Bembridge Limestone.

1879. Woodward. Geol. mag., n. s., v : 89.

4330. **Dytiscus areolatus.** (Dytiscidæ.)

Compared with D. marginalis Linn., Europe.

Locality: Oeningen, Baden. Horizon: Tortonian.

1861. Heer. Rech. climat pays tert., 204 (undescr.).

4331. **Dytiscus avunculus.** (Dytiscidæ.)

Locality: Höhgau, Germany. Horizon: (Miocene ?).

1862. Heyden. Palaeontogr., x : 81–82. *Pl.* 10, *fig.* 39.

4332. **Dytiscus lavateri.** (Dytiscidæ.)

Compared with D. marginalis L., Europe.

Locality: Oeningen, Baden. Horizon: Tortonian.

1847. Heer. Insektenf. tertiärg. Oeningen, i : 24–25, 220–221. *Pl.* 1, *fig.* 6.
1852. Giebel. Deutschl. petref., 654.
1856. " Insect. d. vorwelt, 57.
1862. Heer. Verhandl. holl. maatsch. wetensch. Haarl., xvi : 36–37. *Pl.* 2, *figs.* 11–14.

1865.	Heer.	Urwelt der Schweiz, 361, 383. *Figs.* 279*ab* on *p.* 381.
1872.	"	Monde prim. Suisse, 443, 470. *Figs.* 279*ab* on *p.* 467.
1876.	"	Prim. world Switz., ii: 15, 40. *Figs.* 279*ab* on *p.* 38.
1879.	"	Urwelt der Schweiz, 2^{e} aufl., 387, 409. *Fig.* 321 on *p.* 407.
1885.	Scudder.	Zittel, Handb. palaeont., i, th. ii: 803. *Fig.* 1067.
1886.	"	Zittel-Barrois, Traité de paléont., ii: 804. *Fig.* 1084.
1889.	Nicholson.	Man. palaeont., 3^{d} ed., i: 601. *Fig.* 449*a*.

4333. Dytiscus œningensis. (Dytiscidæ.)

Locality: Oeningen, Baden. Horizon: Tortonian.

1847.	Heer.	Insektenf. tertiärg. Oeningen, i: 26–27. *Pl.* 1, *fig.* 7.
1852.	Giebel.	Deutschl. petref., 654.
1856.	"	Insect. d. vorwelt, 57–58.

4334. Dytiscus zersii. (Dytiscidæ.)

Compared with D. marginalis.

Locality: Morla, vicinity Bergamo, Italy. Horizon: Quaternary.

1882.	Sordelli.	Alc. insetti foss. Lomb., 10–12. *Fig.*
1882.	"	Bull. soc. ent. ital., xiv: 234–236. *Fig.*

4335. Dytiscus zschokkeanus. (Dytiscidæ.)

Locality: Oeningen, Baden. Horizon: Tortonian.

1847.	Heer.	Insektenf. tertiärg. Oeningen, i: 26. *Pl.* 8, *fig.* 3.
1852.	Giebel.	Deutschl. petref., 654.
1856.	"	Insect. d. vorwelt, 57.

4336. Ebæus ———. (Malachidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1845.	Berendt.	Bernst. befindl. organ. reste vorw., i: 56.

4337. Elaphrus irregularis. (Carabidæ.)

Compared with E. viridis Horn.

Locality: Scarboro', Ontario. Horizon: Postpliocene.

1890.	Scudder.	Tert. ins. N. A., 534. *Pl.* 1, *fig.* 56.

4338. Elater ———. (Elateridæ.)

Locality: Prussian amber. Horizon: Ligurian.

1827.	Brongniart.	Dict. sc. nat., li: 233 (élaters).
1829.	Serres.	Géogn. terrains tert., 240 (sternoxes du genre Elater).
1834.	Keferstein.	Naturg. erdkörp., ii: 329 (sternopes).

4339. Elater ———. (Elateridæ.)

Compared with E. æneus.

Locality: Utznach, Switzerland. Horizon: Quaternary.

1839.	Brullé.	Gisem. ins. foss., 20.

4340. Elater ———. (Elateridæ.)

Compared with E. cylindricus Gyll.

Locality: Prussian amber. Horizon: Ligurian.

1832.	Burmeister.	Handb. ent., i: 635.
1836.	"	Man. ent., 576–577.

4341. Elater ——. (Elateridæ.)

Locality: Mundesley, England. Horizon: Pliocene.

1840. Curtis. Lyell, Proc. geol. soc. Lond., iii: 175.

4342. Elater ——. (Elateridæ.)

Locality: Prussian amber. Horizon: Ligurian.

1835. Gravenhorst. Uebers. schles. gesellsch. vaterl. cult., 1834: 92.

4343. [Elater] ——. (Elateridæ.)

Locality: Prussian amber. Horizon: Ligurian.

1825. Guérin. Dict. class. d'hist. nat., viii: 580 (taupin).

4344. Elater ——. (Elateridæ.)

Locality: St. Jakob, Basel, Switzerland. Horizon: Interglacial.

1879. Heer. Urwelt der Schweiz, 2e aufl., 533.

4345. Elater —— (2 sp.). (Elateridæ.)

Compared with E. niger.

Locality: Aix, France. Horizon: Ligurian.

1847. Hope. Trans. ent. soc. Lond., iv: 251.

4346. Elater ——. (Elateridæ.)

Compared with E. æneus.

Locality: Prussian amber. Horizon: Ligurian.

1829. Serres. Géogn. terrains tert., 240.

4347. Elater ——. (Elateridæ.)

Compared with E. castaneus.

Locality: Prussian amber. Horizon: Ligurian.

1829. Serres. Géogn. terrains tert., 240.

4348. Elater ——. (Elateridæ.)

Compared with E. variabilis, E. pilosus.

Locality: Prussian amber. Horizon: Ligurian.

1829. Serres. Géogn. terrains tert., 240–241.

4349. Elater ——. (Elateridæ.)

Locality: Peckham, England. Horizon: Paludina beds, Lower Eocene.

1861. Smith. Geologist, iv: 40.

4350. Elater ehrenwærdi. (Elateridæ.)

Locality: Cap Staratschin, Spitzbergen. Horizon: Miocene.

1870. Heer. K. svenska vetensk.-akad., handl. viii, vii: 74–75. *Pl.* 16, *figs.* 1*a*, 2–4, 4*b*.

4351. Elater holmgreni. (Elateridæ.)

Locality: Cap Staratschin, Spitzbergen. Horizon: Miocene.

1870. Heer. K. svenska vetensk.-akad. handl., viii, vii: 75. *Pl.* 16, *figs.* 5–7.

4352. Elater linearis. (Elateridæ.)

Locality: Mundesley, England. Horizon: Pleistocene.

1888. Bell. Entom., xxi: 2 (Elatior).

4353. Elater naumanni. (Elateridæ.)

Locality: Prussian amber. Horizon: Ligurian.

1856. Giebel. Insect. d. vorwelt, 91.

4354. Elater (Alaus) spectabilis. (Elateridæ.)

Locality: Oeningen, Baden. Horizon: Tortonian.

1865. Heer. Urwelt der Schweiz. *Fig.* 262 on *p.* 378.
1872. " Monde prim. Suisse. *Fig.* 262 on *p.* 464.
1876. " Prim. world Switz., ii. *Fig.* 262 on *p.* 34.
1879. " Urwelt der Schweiz, 2^e aufl. *Fig.* 304 on *p.* 404.

4355. Elater testaceus. (Elateridæ.)

Locality: Copal. Horizon: Recent.

1776. Bloch. Beschäft. berl. gesellsch. naturf. freunde, ii: 183–184. *Pl.* 5, *fig.* 24

4356. Elaterites amissus. (Elateridæ.)

Locality: Greith, Hohe Rhönen. Horizon: Aquitanian.

1847. Heer. Insektenf. tertiärg. Oeningen, i: 142–143. *Pl.* 4, *figs.* 9, 9*b*.
1852. Giebel. Deutschl. petref., 651.
1856. " Insect. d. vorwelt, 94.

4357. Elaterites dicrepidioides. (Elateridæ.)

Locality: Kutschlin, Bohemia. Horizon: Miocene.

1881. Deichmüller. Foss. ins. diatomeensch. Kutschlin, 16–19. *Pl.* 21, *figs.* 5*a–e*.
1881. " Verhandl. leop.-carol. akad. naturf., xlii: 308–311. *Pl.* 21, *figs.* 5*a–e*.

4358. Elaterites lavateri. (Elateridæ.)

Locality: Oeningen, Baden. Horizon: Tortonian.

1847. Heer. Insektenf. tertiärg. Oeningen, i: 141–142. *Pl.* 4, *fig.* 8.
1852. Giebel. Deutschl. petref., 651.
1856. " Insect. d. vorwelt, 94.

4359. Elaterites obsoletus. (Elateridæ.)

Locality: (Oeningen ?, Baden). Horizon: Tortonian.

1847. Heer. Insektenf. tertiärg. Oeningen, i: 142.
1852. Giebel. Deutschl. petref., 651.
1856. " Insect. d. vorwelt, 94.

4360. Elaterium murchisoni. (Elateridæ.)

Locality: Vicinity Corfe, England. Horizon: ——.

1854. Westwood. Proc. geol. soc. Lond., 395 (unnamed). *Pl.* 16, *fig.* 34.
1856. Giebel. Insect. d. vorwelt, 93.

Elatior linearis. See Elater linearis.

4361. Elytridium deplanatum.

Locality: Cap Staratschin, Spitzbergen. **Horizon:** Miocene.

1870. Heer. K. svenska vetensk.-akad. handl., viii, vii: 77–78. *Pl.* 16, *figs.* 41*a*, *c*.

4362. Elytridium rugulosum.

Locality: Cap Staratschin, Spitzbergen. **Horizon:** Miocene.

1870. Heer. K. svenska vetensk.-akad. handl., viii, vii: 78. *Pl.* 16, *figs.* 36–37.

4363. Elytridium scabriusculum.

Locality: Cap Staratschin, Spitzbergen. **Horizon:** Miocene.

1870. Heer. K. svenska vetensk.-akad. handl., viii, vii: 78. *Pl.* 16, *figs.* 28–29.

4364. Elytridium undecimstriatum.

Locality: Cap Staratschin, Spitzbergen. **Horizon:** Miocene.

1870. Heer. K. svenska vetensk.-akad. handl., viii, vii: 77. *Pl.* 16, *figs.* 21–22.

4365. Entimus primordialis. (Otiorhynchidæ.)

Locality: White River, Colo. **Horizon:** Oligocene.

1876. Scudder. Bull. U. S. geol. surv. terr., ii: 84.
1877. " Bull. U. S. geol. surv. terr., iii: 759.
1885. " Zittel, Handb. palaeont., i, th. ii: 789. *Fig.* 1011.
1886. " Zittel-Barrois, Traité de paléont., ii: 789. *Fig.* 1028.
1890. " Tert. ins. N. A., 474–475. *Pl.* 5, *figs.* 109, 109*a*.

4366. Epicærus effossus. (Otiorhynchidæ.)

Locality: Green River, Wyo. **Horizon:** Oligocene.

1878. Scudder. Bull. U. S. geol. surv. terr., iv: 765.
1890. " Tert. ins. N. A., 480–481. *Pl.* 8, *figs.* 7, 35.

See also Eudiagogus effossus.

4367. Epicærus exanimis. (Otiorhynchidæ.)

Locality: Green River, Wyo. **Horizon:** Oligocene.

1878. Scudder. Bull. U. S. geol. surv. terr., iv: 765.
1890. " Tert. ins. N. A., 479–480. *Pl.* 8, *figs.* 30, 31, 38, 42.

See also Eudiagogus exanimis.

4368. Epicærus saxatilis. (Otiorhynchidæ.)

Compared with E. griseus Schönh., Mexico.

Locality: Green River, Wyo. **Horizon:** Oligocene.

1878. Scudder. Bull. U. S. geol. surv. terr., iv: 765.
1890. " Tert. ins. N. A., 478–479. *Pl.* 8, *figs.* 33, 34, 36.

See also Eudiagogus saxatilis.

4369. Epiphanis deletus. (Elateridæ.)

Compared with E. cornutus.

Locality: White River, Utah. **Horizon:** Oligocene.

1876. Scudder. Bull. U. S. geol. surv. terr., ii: 80–81.
1877. " Bull. U. S. geol. surv. terr., iii: 759.
1890. " Tert. ins. N. A., 498. *Pl.* 5, *figs.* 113, 114.

4370. Erinnys deleta. (Staphylinidæ.)

Locality: Aix, France. Horizon: Ligurian.

1874. Oustalet. Ann. sc. géol., v, art., 2: 145-146. *Pl.* 2, *fig.* 16.
See also Lithoplanes ———.

4371. Erinnys elongata. (Staphylinidæ.)

Locality: Aix, France. Horizon: Ligurian.

1874. Oustalet. Ann. sc. géol., v, art. 2: 144-145. *Pl.* 2, *fig.* 15.
See also Lithoplanes ———.

4372. Erirhinoides cariniger. (Curculionidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1856. Motschulsky. Études entom., v: 27.

4373. Erirhinus chantrei. (Curculionidæ.)

Compared with E. (Notaris) scirpi Fabr., Europe.

Locality: Aix, France. Horizon: Ligurian.

1874. Oustalet. Ann. sc. géol., v, art. 2: 289-290. *Pl.* 3, *fig.* 19.

4374. Erycus acridulus (recent). (Curculionidæ.)

Locality: Hösbach, Bavaria. Horizon: Lower Pleistocene.

[1858. Linné. Syst. nat., 378.]
1884. Flach. Käfer unterpleist. Hösbach, 10. *Pl.* 2, *figs.* *8a-c.*
1884. " Verhandl. physik.-med. gesellsch. Würzb., n. f., xviii: 294. *Pl.* 9, *figs.* *8a-c.*

4375. Erycus æthiops (recent.) (Curculionidæ.)

Locality: Hösbach, Bavaria. Horizon: Lower Pleistocene.

[1792. Fabricius. Ent. syst., i, ii: 405.]
1884. Flach. Käfer unterpleist. Hösbach, 10. *Pl.* 2, *fig.* 7.
1884. " Verhandl. physik.-med. gesellsch. Würzb., n. f., xviii: 294. *Pl.* 9, *fig.* 7.

4376. Escheria ——— (4 sp.). (Hydrophilidæ.)

Locality: Brunstatt, Alsatia. Horizon: Middle Oligocene.

1890. Foerster. In litt.

4377. Escheria bella. (Hydrophilidæ.)

Locality: Oeningen, Baden. Horizon: Tortonian.

1862. Heer. Verhandl. holl. maatsch. wetensch. Haarl., xvi: 69-70. *Pl.* 5, *fig.* 17.
1865. " Urwelt der Schweiz. *Fig.* 273 on *p.* 381.
1872. " Monde prim. Suisse. *Fig.* 273 on *p.* 467.
1876. " Prim. world Switz., ii. *Fig.* 273 on *p.* 38.
1879. " Urwelt der Schweiz, 2^e aufl. *Fig.* 315 on *p.* 407.
1885. Scudder. Zittel, Handb. palaeont., i, th. ii: 802. *Fig.* 1063.
1886. " Zittel-Barrois, Traité de paléont., ii: 803. *Fig.* 1080.

4378. Escheria ovalis. (Hydrophilidæ.)

Locality: (Oeningen ?, Baden.) Horizon: Tortonian.

1847. Heer. Insektenf. tertiärg. Oeningen, i: 57-60 (ovata on pl.). *Pl.* 7, *fig.* 23.

1852. Giebel. Deutschl. petref., 653.
1853–'56. Bronn. Lethæa geogn., 3^e aufl., iii: 648. *Pl.* 42′, *figs.* 26*ab*.
1856. Giebel. Insect. d. vorwelt, 51–52.

Escheria ovata. See Escheria ovalis.

4379. Escheria ? protogeæ. (Hydrophilidæ.)

Locality: Vicinity Bonn, Rhenish Prussia. Horizon: Aquitanian.
1847. Heer. Insektenf. tertiärg. Oeningen, i: 60.
1856. Giebel. Insect. d. vorwelt, 52.
See also Coccinella protogeæ.

4380. Eucnemis ——. (Elateridæ.)

Locality: Prussian amber. Horizon: Ligurian.
1845. Berendt. Bernst. befindl. organ. reste vorw., i: 56.

4381. Eudiagogus effossus. (Otiorhynchidæ.)

Locality: Green River, Wyo. Horizon: Oligocene.
1876. Scudder. Bull. U. S. geol. surv. terr., ii: 85–86.
See also Epicærus effossus.

4382. Eudiagogus exanimis. (Otiorhynchidæ.)

Locality: Green River, Wyo. Horizon: Oligocene.
1876. Scudder. Bull. U. S. geol. surv. terr., ii: 85.
See also Epicærus exanimis.

4383. Eudiagogus saxatilis. (Otiorhynchidæ.)

Locality: Green River, Wyo. Horizon: Oligocene.
1876. Scudder. Bull. U. S. geol. surv. terr., ii: 84–85.
See also Epicærus saxatilis.

4384. Eudiagogus terrosus. (Otiorhynchidæ.)

Locality: Green River, Wyo. Horizon: Oligocene.
1878. Scudder. Bull. U. S. geol. surv. terr., iv: 766–767.
1890. " Tert. ins. N. A., 475. *Pl.* 8, *fig.* 29.

4385. Eugnamptus decemsatus. (Rhynchitidæ.)

Locality: Green River, Wyo. Horizon: Oligocene.
1878. Scudder. Bull. U. S. geol. surv. terr., iv: 764–765.
1890. " Tert. ins. N. A., 482. *Pl.* 8, *fig.* 12.

4386. Eugnamptus grandævus. (Rhynchitidæ.)

Locality: Green River, Wyo. Horizon: Oligocene.
1890. Scudder. Tert. ins. N. A., 481–482. *Pl.* 8, *fig.* 20.
See also Sitones grandævus.

4387. Eunectes antiquus. (Dytiscidæ.)

Locality: Corent, France. Horizon: Aquitanian.
1870. Oustalet. Ann. sc. géol., ii, art. 3: 56–57. *Pl.* 1, *figs.* 1, 2.

4388. Euplectus ——. (Pselaphidæ.)

Locality: Prussian amber. Horizon: Ligurian.
1845. Berendt. Bernst. befindl. organ. reste vorw., i: 56.

4370. **Erinnys deleta.** (Staphylinidæ.)

Locality: Aix, France. Horizon: Ligurian.

1874. Oustalet. Ann. sc. géol., v, art., 2: 145–146. *Pl.* 2, *fig.* 16.
See also Lithoplanes ———.

4371. **Erinnys elongata.** (Staphylinidæ.)

Locality: Aix, France. Horizon: Ligurian.

1874. Oustalet. Ann. sc. géol., v, art. 2: 144–145. *Pl.* 2, *fig.* 15.
See also Lithoplanes ———.

4372. **Erirhinoides cariniger.** (Curculionidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1856. Motschulsky. Études entom., v: 27.

4373. **Erirhinus chantrei.** (Curculionidæ.)

Compared with E. (Notaris) scirpi Fabr., Europe.

Locality: Aix, France. Horizon: Ligurian.

1874. Oustalet. Ann. sc. géol., v, art. 2: 289–290. *Pl.* 3, *fig.* 19.

4374. **Erycus acridulus** (recent). (Curculionidæ.)

Locality: Hösbach, Bavaria. Horizon: Lower Pleistocene.

[1858. Linné. Syst. nat., 378.]
1884. Flach. Käfer unterpleist. Hösbach, 10. *Pl.* 2, *figs.* 8*a–c*.
1884. " Verhandl. physik.-med. gesellsch. Würzb., n. f., xviii: 294. *Pl.* 9, *figs.* 8*a–c*.

4375. **Erycus æthiops** (recent.) (Curculionidæ.)

Locality: Hösbach, Bavaria. Horizon: Lower Pleistocene.

[1792. Fabricius. Ent. syst., i, ii: 405.]
1884. Flach. Käfer unterpleist. Hösbach, 10. *Pl.* 2, *fig.* 7.
1884. " Verhandl. physik.-med. gesellsch. Würzb., n. f., xviii: 294. *Pl.* 9, *fig.* 7.

4376. **Escheria** ——— (4 sp.). (Hydrophilidæ.)

Locality: Brunstatt, Alsatia. Horizon: Middle Oligocene.

1890. Foerster. In litt.

4377. **Escheria bella.** (Hydrophilidæ.)

Locality: Oeningen, Baden. Horizon: Tortonian.

1862. Heer. Verhandl. holl. maatsch. wetensch. Haarl., xvi: 69–70. *Pl.* 5, *fig.* 17.
1865. " Urwelt der Schweiz. *Fig.* 273 on *p.* 381.
1872. " Monde prim. Suisse. *Fig.* 273 on *p.* 467.
1876. " Prim. world Switz., ii. *Fig.* 273 on *p.* 38.
1879. " Urwelt der Schweiz, 2e aufl. *Fig.* 315 on *p.* 407.
1885. Scudder. Zittel, Handb. palaeont., i, th. ii: 802. *Fig.* 1063.
1886. " Zittel-Barrois, Traité de paléont., ii: 803. *Fig.* 1080.

4378. **Escheria ovalis.** (Hydrophilidæ.)

Locality: (Oeningen?, Baden.) Horizon: Tortonian.

1847. Heer. Insektenf. tertiärg. Oeningen, i: 57–60 (ovata on pl.). *Pl.* 7, *fig.* 23.

1852. Giebel. Deutschl. petref., 653.
1853–'56. Bronn. Lethæa geogn., 3e aufl., iii: 648. *Pl.* 42′, *figs.* 26*ab*.
1856. Giebel. Insect. d. vorwelt, 51–52.

Escheria ovata. See Escheria ovalis.

4379. Escheria ? protogeæ. (Hydrophilidæ.)

Locality: Vicinity Bonn, Rhenish Prussia. Horizon: Aquitanian.

1847. Heer. Insektenf. tertiärg. Oeningen, i: 60.
1856. Giebel. Insect. d. vorwelt, 52.
See also Coccinella protogeæ.

4380. Eucnemis ———. (Elateridæ.)

Locality: Prussian amber. Horizon: Ligurian.

1845. Berendt. Bernst. befindl. organ. reste vorw., i: 56.

4381. Eudiagogus effossus. (Otiorhynchidæ.)

Locality: Green River, Wyo. Horizon: Oligocene.

1876. Scudder. Bull. U. S. geol. surv. terr., ii: 85–86.
See also Epicærus effossus.

4382. Eudiagogus exanimis. (Otiorhynchidæ.)

Locality: Green River, Wyo. Horizon: Oligocene.

1876. Scudder. Bull. U. S. geol. surv. terr., ii: 85.
See also Epicærus exanimis.

4383. Eudiagogus saxatilis. (Otiorhynchidæ.)

Locality: Green River, Wyo. Horizon: Oligocene.

1876. Scudder. Bull. U. S. geol. surv. terr., ii: 84–85.
See also Epicærus saxatilis.

4384. Eudiagogus terrosus. (Otiorhynchidæ.)

Locality: Green River, Wyo. Horizon: Oligocene.

1878. Scudder. Bull. U. S. geol. surv. terr., iv: 766–767.
1890. " Tert. ins. N. A., 475. *Pl.* 8, *fig.* 29.

4385. Eugnamptus decemsatus. (Rhynchitidæ.)

Locality: Green River, Wyo. Horizon: Oligocene.

1878. Scudder. Bull. U. S. geol. surv. terr., iv: 764–765.
1890. " Tert. ins. N. A., 482. *Pl.* 8, *fig.* 12.

4386. Eugnamptus grandævus. (Rhynchitidæ.)

Locality: Green River, Wyo. Horizon: Oligocene.

1890. Scudder. Tert. ins. N. A., 481–482. *Pl.* 8, *fig.* 20.
See also Sitones grandævus.

4387. Eunectes antiquus. (Dytiscidæ.)

Locality: Corent, France. Horizon: Aquitanian.

1870. Oustalet. Ann. sc. géol., ii, art. 3: 56–57. *Pl.* 1, *figs.* 1, 2.

4388. Euplectus ———. (Pselaphidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1845. Berendt. Bernst. befindl. organ. reste vorw., i: 56.

4389. Eupsinoides glabrellus. (Pselaphidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1856. **Motschulsky.** Études entom., v: 26–27.

4390. Eurhinus occultus. (Curculionidæ.)

Locality: Florissant, Colo. Horizon: Oligocene.

1876. Scudder. Bull. U. S. geol. surv. terr., ii: 87.

4391. Eurychirus (Otiorhynchus) induratus. (Otiorhynchidæ.)

Locality: Rott, Rhenish Prussia. Horizon: Aquitanian.

1866. Heyd.-Heyd. Palaeontogr., xv: 149–150. ("Perhaps forms a new genus to which perhaps belong Sphenophorus nægelianus Heer and S. regelianus Heer.") *Pl.* 23, *figs.* 16, 17.
1866. " Käfer u. polypen, 19–20. *Pl.* 2, *figs.* 16, 17.
1870. L. Heyden. Foss. dipt. Rott, 29.
1870. " Palaeontogr., xvii: 265.

4392. Eurythyrea longipennis. (Buprestidæ.)

Locality: Oeningen, Baden. Horizon: Tortonian.

1847. Heer. Insektenf. tertiärg. Oeningen, i: 112–114. *Pl.* 3, *fig.* 10.
1852. Giebel. Deutschl. petref., 652.
1856. " Insect. d. vorwelt, 85.

Eurytrachelus primigenius. See Dorcus (Eurytrachelus) primigenius.

4393. Feronia ——. (Carabidæ.)

Compared with F. leucophthalma.

Locality: Utznach, Switzerland. Horizon: Quaternary.

1839. Brullé. Gisem. ins. foss., 20.

4394. Feronia (Pœcilus) ——. (Carabidæ.)

Locality: Hösbach, Bavaria. Horizon: Lower Pleistocene.

1884. Flach. Käfer unterpleist. Hösbach, 5.
1884. " Verhandl. physik.-med. gesellsch. Würzb., n. f., xviii: 289.

4395. Feronia (Pterostichus) ——. (Carabidæ.)

Locality: Hösbach, Bavaria. Horizon: Lower Pleistocene.

1884. Flach. Käfer unterpleist. Hösbach, 5.
1884. " Verhandl. physik.-med. gesellsch. Würzb., n. f., xviii: 289.

4396. Feronia (Steropus) æthiops (recent). (Carabidæ.)

Locality: Hösbach, Bavaria. Horizon: Lower Pleistocene.

[1797. Panzer. Faun. germ., xxxvii: 22.]
1884. Flach. Käfer unterpleist. Hösbach, 5. *Pl.* 1, *fig.* 7.
1884. " Verhandl. physik.-med. gesellsch. Würzb., n. f., xviii: 289. *Pl.* 8, *fig.* 7.

4397. Feronia (Argutor) diligens (recent). (Carabidæ.)

Locality: Hösbach, Bavaria. Horizon: Lower Pleistocene.

[1824. Sturm. Deutschl. fauna, Ins., v: 81. *Pl.* 117, *figs.* *a*, *A*.]
1884. Flach. Käfer unterpleist. Hösbach, 6. *Pl.* 1, *fig.* 8.
1884. " Verhandl. physik.-med. gesellsch. Würzb., n. f., xviii: 290. *Pl.* 8, *fig.* 8.

4398. Feronia minax. (Carabidæ.)

Locality: Aix, France. Horizon: Ligurian.

1874. Oustalet. Ann. sc. géol., v, art. 2: 102–104. *Pl.* 1, *fig.* 6.

4399. Feronia (Platysma) oblongopunctata (recent). (Carabidæ.)

Locality: Hösbach, Bavaria. Horizon: Lower Pleistocene.

[**1801.** Fabricius. Syst. eleuth., i: 183.]
1884. Flach. Käfer unterpleist. Hösbach, 5. *Pl.* 1, *fig.* 6.
1884. " Verhandl. physik.-med. gesellsch. Würzb., n. f., xviii: 289. *Pl.* 8, *fig.* 6.

4400. Feronia (Abax) parallela (recent). (Carabidæ.)

Locality: Hösbach, Bavaria. Horizon: Lower Pleistocene.

[**1812.** Duftschmid. Faun. austr., ii: 64.]
1884. Flach. Käfer unterpleist. Hösbach, 6.
1884. " Verhandl. physik.-med. gesellsch. Würzb., n. f., xviii: 290.

4401. Feronia provincialis. (Carabidæ.)

Locality: Aix, France. Horizon: Ligurian.

1874. Oustalet. Ann. sc. géol., v, art. 2: 105–106. *Pl.* 1, *fig.* 4.

4402. Fusslinia amœna. (Buprestidæ.)

Locality: Oeningen, Baden. Horizon: Tortonian.

1847. Heer. Insektenf. tertiärg. Oeningen, i: 123–128. *Pl.* 6, *fig.* 4.
1852. Giebel. Deutschl. petref., 651.
1853–'56. Bronn. Lethæa geogn., 3^{e} aufl., iii: 647. *Pl.* 42′, *figs.* 28*a–c*.
1856. Giebel. Insect. d. vorwelt, 89–90.
1885. Scudder. Zittel, Handb. palaeont., i, th. ii: 797. *Fig.* 1035.
1886. " Zittel-Barrois, Traité de paléont., ii: 797. *Fig.* 1053.

4403. Galeruca ———. (Chrysomelidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1845. Berendt. Bernst. befindl. organ. reste vorw., i: 56 (Galleruca).

4404. Galeruca ———. (Chrysomelidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1832. Burmeister. Handb. ent., i: 635 (Galleruca).
1836. " Man. ent., 577.

4405. Galeruca ———. (Chrysomelidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1856. Menge. Progr. petrischule Danzig, 1856: 21.

4406. Galeruca ———. (Chrysomelidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1838. Robert. Bull. soc. géol. France, ix: 114.

4407. Galeruca aichnorni. (Chrysomelidæ.)

Locality: Radoboj, Croatia. Horizon: Mayencian.

1858. Heer. Ber. versamml. deutsch. naturf., xxxii: 119 (undescr.).

4408. Galeruca buchi. (Chrysomelidæ.)

Compared with G. halensis.

Locality: Oeningen, Baden. Horizon: Tortonian.

1865. Heer. Urwelt der Schweiz, 372 (Gallerucа). *Fig.* 236 on *p.* 371.
1872. " Monde prim. Suisse, 456. *Fig.* 236 on *p.* 455.
1876. " Prim. world Switz., ii: 26. *Fig.* 236 on *p.* 27.
1879. " Urwelt der Schweiz, 2e aufl., 397. *Fig.* 278.

4409. Galeruca gemmifera. (Chrysomelidæ.)

Compared with G. (Œdionychus) decemguttata, Cuba, Brazil.

Locality: Oeningen, Baden. Horizon: Tortonian.

1879. Heer. Urwelt der Schweiz, 2e aufl., 397 (Galleruca). *Fig.* 262 on *p.* 384.

4410. Galerucella ———. (Chrysomelidæ.)

Locality: Brunstatt, Alsatia. Horizon: Middle Oligocene.

1890. Foerster. In litt.

4411. Galerucella picea. (Chrysomelidæ.)

Compared with G. maritima LeC.

Locality: Nine-mile Creek, British Columbia. Horizon: ———.

1879. Scudder. Rept. progr. geol. surv. Can., 1877–'78: B182–183 (Gallerucella).
1879. " Insect. tert. Nicola, 7–8.
1890. " Tert. ins. N. A., 485. *Pl.* 2, *fig.* 31.

Galleruca (several species). See Galeruca, the same species.

Gallerucella picea. See Galerucella picea.

4412. Geotrupes ———. (Scarabæidæ.)

Locality: East Scotland. Horizon: Pleistocene.

1888. Bell. Entom., xxi: 2.

4413. Geotrupes? ———. (Scarabæidæ.)

Locality: Aix, France. Horizon: Ligurian.

1847. Hope. Trans. ent. soc. Lond., iv: 251.

4414. Geotrupes atavus. (Scarabæidæ.)

Locality: Aix, France. Horizon: Ligurian.

1874. Oustalet. Ann. sc. géol., v, art. 2: 199–201. *Pl.* 3, *fig.* 7.

4415. Geotrupes germari. (Scarabæidæ.)

Locality: Oeningen, Baden. Horizon: Tortonian.

1862. Heer. Verhandl. holl. maatsch. wetensch. Haarl., xvi: 71–72. *Pl.* 6, *fig.* 10.
1865. " Urwelt der Schweiz, 379.
1872. " Monde prim. Suisse, 465.
1876. " Prim. world Switz., ii: 36.
1879. " Urwelt der Schweiz, 2e aufl., 405.

4416. Geotrupes proævus. (Scarabæidæ.)

Locality: Orsberg, Germany. Horizon: Miocene.

1849.	Germar.	Zeitschr. deutsch. geol. gesellsch., i: 57–58. *Pl.* 2, *fig.* 2.
1852.	Giebel.	Deutschl. petref., 653.
1856.	"	Insect. d. vorwelt, 36.

4417. Geotrupes putridarius (recent). (Scarabæidæ.)

Locality: Vannes, France. Horizon: Pleistocene.

[1846.	Erichson.	Naturg. ins., iii: 730.]
1876.	Fliche.	Comptes rendus, lxxxii: 979.

4418. Geotrupes stercorarius (recent). (Scarabæidæ.)

Locality: Hailes Quarry, Edinburgh, Scotland. Horizon: Peat below till.

[1746.	Linné.	Faun. suec., 135.]
1881.	Purves.	Geikie, Prehist. Europe, 256.

4419. Geotrupes vernalis (recent). (Scarabæidæ.)

Locality: Vannes, France. Horizon: Pleistocene.

[1746.	Linné.	Faun. suec., 136.]
1876.	Fliche.	Comptes rendus, lxxxii: 979.

4420. Geotrupes vetustus. (Scarabæidæ.)

Compared with G. sylvaticus.

Locality: Vicinity Bonn, Rhenish Prussia. Horizon: Aquitanian ?.

1837.	Germar.	Fauna insect. Europæ, xix: 6. *Pl.* 6.
1839.	Brullé.	Gisem. ins. foss., 20.
1852.	Giebel.	Deutschl. petref., 653.
1856.	"	Insect. d. vorwelt, 35–36.

4421. Glaphyrus antiquus. (Scarabæidæ.)

Locality: Oeningen, Baden. Horizon: Tortonian.

1862.	Heer.	Verhandl. holl. maatsch. wetensch. Haarl., xvi: 79. *Pl.* 6, *fig.* 20.
1865.	"	Urwelt der Schweiz, 380.
1872.	"	Monde prim. Suisse, 466.
1876.	"	Prim. world Switz., ii: 37.
1879.	"	Urwelt der Schweiz, 2^{e} aufl., 406.

4422. Glenopterus lævigatus. (Carabidæ.)

Locality: Oeningen, Baden. Horizon: Tortonian.

1847.	Heer.	Insektenf. tertiärg. Oeningen, i: 16–18, 219. *Pl.* 1, *fig.* 2.
1852.	Giebel.	Deutschl. petref., 655.
1856.	"	Insect. d. vorwelt, 71.
1885.	Scudder.	Zittel, Handb. palaeont., i, th. ii: 804. *Fig.* 1069.
1886.	"	Zittel-Barrois, Traité de paléont., ii: 805. *Fig.* 108

Gnorimus ædilis. See Trichius (Gnorimus) ædilis.

Gnorimus lugubris. See Trichius (Gnorimus) lugubris.

4423. Gonioctena clymene. (Chrysomelidæ.)

Compared with G. pallida Fabr.

Locality: Oeningen, Baden. Horizon: Tortonian.

1847.	Heer.	Insektenf. tertiärg. Oeningen, i: 213–214. *Pl.* 7, *fig.* 14.
1852.	Giebel.	Deutschl. petref., 648.

1856. Giebel. Insect. d. vorwelt, 118.
1865. Heer. Urwelt der Schweiz, 372.
1872. " Monde prim. Suisse, 456.
1876. " Prim. world Switz., ii: 26.
1879. " Urwelt der Schweiz, 2e aufl., 397.

4424. Gonioctena curtisii. (Chrysomelidæ.)

Locality: Aix, France. Horizon: Ligurian.

1874. Oustalet. Ann. sc. géol., v, art. 2: 336–337. *Pl.* 4, *fig.* 14.

4425. Gonioctena japeti. (Chrysomelidæ.)

Locality: Oeningen, Baden. Horizon: Tortonian.

1847. Heer. Insektenf. tertiärg. Oeningen, i: 212–213. *Pl.* 7, *fig.* 13.
1852. Giebel. Deutschl. petref., 648.
1856. " Insect. d. vorwelt, 117–118.

4426. Gonioctena primordialis. (Chrysomelidæ.)

Locality: Schossnitz, Silesia. Horizon: Miocene.

1869. Assmann. Beitr. ins. d. vorwelt, 43–44. *Pl.* 1, *figs.* 6, 6*a*.
1869. " Schles. zeitschr. f. ent., (2), i: 43–44. *Pl.* 1, *figs.* 6, 6*a*.

4427. Gonocephalum (Hopatrum) pristinum. (Tenebrionidæ.)

Locality: Rott, Rhenish Prussia. Horizon: Aquitanian.

1866. Heyd.-Heyd. Palaeontogr., xv: 144–145 (Opatrum). *Pl.* 22, *fig.* 27.
1866. " Käfer u. polypen, 14–15. *Pl.* 1, *fig.* 27.

4428. Gymnetron ———. (Curculionidæ.)

Locality: Brunstatt, Alsatia. Horizon: Middle Oligocene.

1890. Foerster. In litt.

4429. Gymnetron lecontei. (Curculionidæ.)

Compared with G. teter Schönh.

Locality: Green River, Wyo. Horizon: Oligocene.

1878. Scudder. Bull. U. S. geol. surv. terr., iv: 767.
1890. " Tert. ins. N. A., 471–472. *Pl.* 8, *fig.* 26.

4430. Gymnochila obesa. (Trogositidæ.)

Locality: Oeningen, Baden. Horizon: Tortonian.

1862. Heer. Verhandl. holl. maatsch. wetensch. Haarl., xvi: 56–57. *Pl.* 3, *figs.* 11, 11*b*.
1865. " Urwelt der Schweiz, 382.
1872. " Monde prim. Suisse, 469.
1876. " Prim. world Switz., ii: 40.
1879. " Urwelt der Schweiz, 2e aufl., 408.

4431. Gymnopleurus deperditus. (Scarabæidæ.)

Locality: Oeningen, Baden. Horizon: Tortonian.

1862. Heer. Verhandl. holl. maatsch. wetensch. Haarl., xvi: 73. *Pl.* 6, *fig.* 9.

4432. **Gymnopleurus rotundatus.** (Scarabæidæ.)

Locality: Oeningen, Baden. Horizon: Tortonian.

1862.	Heer.	Verhandl. holl. maatsch. wetensch. Haarl., xvi: 72-73. *Pl.* 6, *fig.* 8.
1865.	"	Urwelt der Schweiz, 379. *Fig.* 270 on *p.* 378.
1872.	"	Monde prim. Suisse, 465. *Fig.* 270 on *p.* 463.
1876.	"	Prim. world Switz., ii: 36. *Fig.* 270 on *p.* 34.
1879.	"	Urwelt der Schweiz, 2^e aufl., 405. *Fig.* 312 on *p.* 40

4433. **Gymnopleurus sisyphus.** (Scarabæidæ.)

Locality: Oeningen, Baden. Horizon: Tortonian.

1847.	Heer.	Insektenf. tertiärg. Oeningen, i: 64–66. *Pl.* 7, *fig.* 25.
1852.	Giebel.	Deutschl. petref., 653.
1856.	"	Insect. d. vorwelt, 38.

4434. **Gyrinoides limbatus.** (Gyrinidæ.)

Compared with Gyrinus minutus.

Locality: Prussian amber. Horizon: Ligurian.

1856.	Motschulsky.	Études entom., v: 26.

4435. **Gyrinus** ———. (Gyrinidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1845.	Berendt.	Bernst. befindl. organ. reste vorw., i: 56.

4436. **Gyrinus** ———. (Gyrinidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1856.	Menge.	Progr. petrischule Danzig, 1856: 23.

4437. **Gyrinus marinus** (recent). (Gyrinidæ.)

Locality: St. Jakob, Basel, Switzerland. Horizon: Interglacial.

[1808.	Gyllenhal.	Ins. suec., i: 143.]
1879.	Heer.	Urwelt der Schweiz, 2^e aufl., 533.
1885.	Scudder.	Zittel, Handb. palaeont., i, th. ii: 803.
1886.	"	Zittel-Barrois, Traité de paléont., ii: 803.
1886.	"	Bull. U. S. geol. surv., No. 31: 83.

4438. **Gyrinus natator** (recent). (Gyrinidæ.)

Locality: Schwerzenbach, Switzerland. Horizon: Glacial clay.

[1746.	Linné.	Faun. suec., no. 779.]
1879.	Heer.	Urwelt der Schweiz, 2^e aufl., 581. *Pl.* 12, *fig.* 17.
1885.	Scudder.	Zittel, Handb. palaeont., i, th. ii: 803.
1886.	"	Zittel-Barrois, Traité de paléont., ii: 803.
1886.	"	Bull. U. S. geol. surv., No. 31: 83.

4439. **Gyrophæna saxicola.** (Staphylinidæ.)

Compared with G. vinula.

Locality: White River, Colo. Horizon: Oligocene.

1876.	Scudder.	Bull. U. S. geol. surv. terr., ii: 78.
1877.	"	Bull. U. S. geol. surv. terr., iii: 759.
1890.	"	Tert. ins. N. A., 509. *Pl.* 5, *figs.* 123, 124.

4440. Hæmonia ———. (Chrysomelidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1845. Berendt. Bernst. befindl. organ. reste vorw., i: 56.

4441. Haliplus ———. (Haliplidæ.)

Locality: Oeningen, Baden. Horizon: Tortonian.

1888. Schöberlin. Soc. entom., iii: 42.

4442. Hallomenus (or Orchesia) ———. (Melandryidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1845. Berendt. Bernst. befindl. organ. reste vorw., i: 56.

4443. Haltica ———. (Chrysomelidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1845. Berendt. Bernst. befindl. organ. reste vorw., i: 56.

4444. Haltica ———. (Chrysomelidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1831. Burmeister. Oken, Isis, 1831: 1100.
1832. " Handb. ent., i: 635.
1836. " Man. ent., 577.

4445. Haltica ———. (Chrysomelidæ.)

Locality: Brunstatt, Alsatia. Horizon: Middle Oligocene.

1889. Foerster. Mitth. comm. geol. Elsass-Lothr., ii: 102.

4446. Haltica ——— (3 sp.). (Chrysomelidæ.)

Locality: Brunstatt, Alsatia. Horizon: Middle Oligocene.

1890. Foerster. In litt.

4447. Haltica ———. (Chrysomelidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1856. Menge. Progr. petrischule Danzig, 1856: 21.

4448. Harpalus ———. (Carabidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1845. Berendt. Bernst. befindl. organ. reste vorw., i: 56.

4449. Harpalus ———. (Carabidæ.)

Locality: Aix, France. Horizon: Ligurian.

1829. Curtis. Edinb. new phil. journ., vii: 295 (perhaps Ophonus).
1829. " Murchison-Lyell, Tert. form. Aix, 11.

4450. Harpalus (Argutor or Ophonus) ———. (Carabidæ.)

Locality: Mundesley, England. Horizon: Pliocene.

1840. Curtis. Lyell, Proc. geol. soc. Lond., iii: 175.
1888. Bell. Entom., xxi: 2.

4451. Harpalus ——. (Carabidæ.)

Locality: Brunstatt, Alsatia. Horizon: Middle Oligocene.

1888. Foerster. Mitth. comm. geol. Elsass Lothr., i: 165.
1889. " Mitth. comm. geol. Elsass-Lothr., ii: 103.

4452. Harpalus —— (2 sp.). (Carabidæ.)

Locality: Brunstatt, Alsatia. Horizon: Middle Oligocene.

1890. Foerster. In litt.

4453. Harpalus ——. (Carabidæ.)

Compared with H. ruficornis.

Locality: Aix, France. Horizon: Ligurian.

1847. Hope. Trans. ent. soc. Lond., iv: 250.

4454. Harpalus ——. (Carabidæ.)

Compared with H. griseus.

Locality: Aix, France. Horizon: Ligurian.

1829. Serres. Géogn. terrains tert., 221, 271–272. *Pl.* 5, *fig.* 7.
1856. Giebel. Insect. d. vorwelt, 64.

4455. Harpalus abolitus. (Carabidæ.)

Locality: Rott, Rhenish Prussia. Horizon: Aquitanian.

1866. Heyd.-Heyd. Palaeontogr., xv: 134. *Pl.* 22, *fig.* 1.
1866. " Käfer u. polypen, 4. *Pl.* 1, *fig.* 1.

4456. Harpalus bruckmanni. (Carabidæ.)

Locality: Oeningen, Baden. Horizon: Tortonian.

1862. Heer. Verhandl. holl. maatsch. wetensch. Haarl., xvi: 26–27. *Pl.* 1, *figs.* 21, 21*b*.

4457. Harpalus constrictus. (Carabidæ.)

Locality: Oeningen, Baden. Horizon: Tortonian.

1862. Heer. Verhandl. holl. maatsch. wetensch. Haarl., xvi: 29. *Pl.* 1, *fig.* 24.

4458. Harpalus deletus. (Carabidæ.)

Locality: Aix, France. Horizon: Ligurian.

1874. Oustalet. Ann. sc. géol., v, art. 2: 111–114. *Pl.* 1, *fig.* 5.

Harpalus diluvianus. See Carabites (Harpalus) diluvianus.

Harpalus finis. See Harpalus sinis.

4459. Harpalus lævicollis (recent). **(Carabidæ.)**

Locality: Schwerzenbach, Switzerland. Horizon: Glacial clay.

[1812. Duftschmid. Fauna austr., ii: 163.]
1879. Heer. Urwelt der Schweiz, 2e aufl., 581. *Pl.* 12, *figs.* 16, 16*b*.
1885. Scudder. Zittel, Handb. palaeont., i, th. ii: 804.
1886. " . Bull. U. S. geol. surv. No. 31: 84.

4460. Harpalus nero. (Carabidæ.)

Locality: Aix, France. Horizon: Ligurian.

1874. Oustalet. Ann. sc. géol., v, art. 2: 109–111. *Pl.* 1, *fig.* 9.

4461. Harpalus sinis. (Carabidæ.)

Locality: Oeningen, Baden. Horizon: Tortonian.

1847. Heer. Insektenf. tertiärg. Oeningen, i: 219–220. *Pl.* 8, *fig.* 2.
1852. Giebel. Deutschl. petref., 655 (tinis).
1856. " Insect. d. vorwelt, 62, 64.

4462. Harpalus stierlini. (Carabidæ.)

Locality: Oeningen, Baden. Horizon: Tortonian.

1862. Heer. Verhandl. holl. maatsch. wetensch. Haarl., xvi: 27. *Pl.* 1, *fig.* 23

4463. Harpalus stygius. (Carabidæ.)

Locality: Oeningen, Baden. Horizon: Tortonian.

1862. Heer. Verhandl. holl. maatsch. wetensch. Haarl., xvi: 28. *Pl.* 1, *fig.* 22.

4464. Harpalus tabidus. (Carabidæ.)

Locality: Radoboj, Croatia. Horizon: Mayencian.

1847. Heer. Insektenf. tertiärg. Oeningen, i: 23–24. *Pl.* 7, *fig.* 19.
1852. Giebel. Deutschl. petref., 655.
1856. " Insect. d. vorwelt, 62.

4465. Harpalus tardigradus. (Carabidæ.)

Locality: Oeningen, Baden. Horizon: Tortonian.

1862. Heer. Verhandl. holl. maatsch. wetensch. Haarl., xvi: 28. *Pl.* 1, *fig.* 20.
1865. " Urwelt der Schweiz. *Fig.* 284 on *p.* 384.
1872. " Monde prim. Suisse. *Fig.* 284 on *p.* 471.
1876. " Prim. world Switz, ii. *Fig.* 284 on *p.* 42.
1879. " Urwelt der Schweiz, 2^e aufl. *Fig.* 326 on *p.* 410.

4466. Helluomorpha protogæa. (Carabidæ.)

Compared with H. tripustulata, China.

Locality: Prussian amber. Horizon: Ligurian.

1862. Giebel. Zeitschr. ges. naturw., xx: 316.

4467. Helobia ———. (Carabidæ.)

Locality: Aix, France. Horizon: Ligurian.

1847. Hope. Trans. ent. soc. Lond., iv: 250.

4468. Helophorus exilis. (Hydrophilidæ.)

Locality: Oeningen, Baden. Horizon: Tortonian.

1862. Heer. Verhandl. holl. maatsch. wetensch. Haarl., xvi: 71. *Pl.* 5, *fig.* 20.

4469. Helophorus magnus. (Hydrophilidæ.)

Locality: Oeningen, Baden. Horizon: Tortonian.

1862. Heer. Verhandl. holl. maatsch. wetensch. Haarl., xvi: 71. *Pl.* 5, *fig.* 19.

4470. Helophorus rigescens. (Hydrophilidæ.)

Compared with H. tuberculatus Gyll.

Locality: Scarboro', Ontario. Horizon: Pleistocene.

1890. Scudder. Tert. ins. N. A., 516–517. *Pl.* 1, *fig.* 53.

4471. Helops ——. (Tenebrionidæ.)

Compared with H. lanipes.

Locality: Eisleben, Saxony. Horizon: ——.

1856. Giebel. Zeitschr. ges. naturw., vii: 385. *Pl.* 5, *fig.* 2.

4472. Helops meissneri. (Tenebrionidæ.)

Locality: (Oeningen, Baden?.) Horizon: Tortonian.

1847. Heer. Insektenf. tertiärg. Oeningen, i: 161–162. *Pl.* 5, *fig.* 9.
1852. Giebel. Deutschl. petref., 650.
1856. " Insect. d. vorwelt, 111.

4473. Helops molassicus. (Tenebrionidæ.)

Locality: Lausanne, Switzerland. Horizon: Miocene.

1883. Heer. Flora foss. grönl., ii: 145. *Pl.* 109, *fig.* 9.

4474. Helops wetteravicus. (Tenebrionidæ.)

Compared with H. lanipes.

Localities: Salzhausen, Germany; Umivik, Greenland. Horizon: Miocene.

1865. Heyd.-Heyd. Palaeontogr., xiv: 33. *Pl.* 9, *fig.* 18.
1883. Heer. Flora foss. grönl., ii: 145. *Pl.* 109, *figs.* 8, 8*b–c*.
1886. Scudder. Bull. U. S. geol. surv., No. 31: 71.

4475. Hesthesis antiqua. (Cerambycidæ.)

Locality: Vicinity Bonn, Rhenish Prussia. Horizon: Aquitanian?.

1862. Heyden. Palaeontogr., x: 73.
See also Molorchus antiquus.

4476. Hesthesis immortua. (Cerambycidæ.)

Locality: Rott, Rhenish Prussia. Horizon: Aquitanian.

1862. Heyden. Palaeontogr., x: 72–73. *Pl.* 10, *fig.* 36.

4477. Hipporhinus brevis. (Curculionidæ.)

Locality: Aix, France. Horizon: Ligurian.

1856. Giebel. Insect. d. vorwelt, 146.

4478. Hipporhinus heeri. (Curculionidæ.)

Locality: Aix, France. Horizon: Ligurian.

1849. Germar. Zeitschr. deutsch. geol. gesellsch., i: 62–64. *Pl* 2, *figs.* 6, 6*a*.
1856. Heer. Viert. naturf. gesellsch. Zürich, i: 21–22. *Pl.* 1, *fig.* 11.
1856. Giebel. Insect. d. vorwelt, 146.
1874. Oustalet. Ann. sc. géol., v, art. 2: 214–230. *Pl.* 3, *fig.* 11; *pl.* 4, *figs.* 1–5, 8; *pl.* 5, *figs.* 1, 2; *pl.* 6, *figs.* 4, 5, 14.
1885. Scudder. Zittel, Handb. palaeont., i, th. ii: 789. *Fig.* 1008.
1886. " Zittel-Barrois, Traité de paléont., ii: 789. *Fig.* 1026.
1886. " Bull. U. S. geol. surv., No. 31: 68.
See also Brachycerus —— Serres (cf. hispanicus).

4479. Hipporhinus longipes. (Curculionidæ.)

Locality: Aix, France. Horizon: Ligurian.

1874. Heer. MSS. in Oustalet.
See also Brachyderes longipes, etc.

4480. **Hipporhinus reynesii.** (Curculionidæ.)

Locality: Aix, France. Horizon: Ligurian.

1874. Oustalet. Ann. sc. géol., v, art. 2: 231–234. *Pl.* 5, *figs.* 3, 4.

4481. **Hipporhinus schaumii.** (Curculionidæ.)

Locality: Aix, France. Horizon: Ligurian.

1856. Heer. Viert. naturf. gesellsch. Zürich, i: 22. *Pl.* 1, *fig.* 10.
1874. Oustalet. Ann. sc. géol., v, art. 2: 230–231. *Pl.* 6, *fig.* 6.

4482. **Hister** ———. (Histeridæ.)

Locality: Prussian amber. Horizon: Ligurian.

1845. Berendt. Bernst. befindl. organ. reste vorw., i: 56.

4483. **Hister** ——— (2 sp.). (Histeridæ.)

Locality: Prussian amber. Horizon: Ligurian.

1856. Menge. Progr. petrischule Danzig. 1856: 21.

4484. **Hister æmulus.** (Histeridæ.)

Locality: Oeningen, Baden. Horizon: Tortonian.

1862. Heer. Verhandl. holl. maatsch. wetensch. Haarl., xvi: 60. *Pl.* 3, *fig.* 23.
1865. " Urwelt der Schweiz, 382.
1872. " Monde prim. Suisse, 468.
1876. " Prim. world Switz., ii: 39.
1879. " Urwelt der Schweiz, 2e aufl., 407.

4485. **Hister antiquus.** (Histeridæ.)

Locality: Oeningen, Baden. Horizon: Tortonian.

1862. Heer. Verhandl. holl. maatsch. wetensch. Haarl., xvi: 58. *Pl.* 3, *fig.* 17.
1865. " Urwelt der Schweiz, 382.
1872. " Monde prim. Suisse, 468.
1876. " Prim. world Switz., ii: 39.
1879. " Urwelt der Schweiz, 2e aufl., 407.

4486. **Hister cadaverinus** (recent). (Histeridæ.)

Locality: Oeningen, Baden. Horizon: Tortonian.

[1803. Hoffmann. Ent. hefte, i: 34. *Pl.* 1, *fig.* 2.]
1888. Schöberlin. Soc. entom., iii: 42.

4487. **Hister coprolithorum.** (Histeridæ.)

Locality: Oeningen, Baden. Horizon: Tortonian.

1862. Heer. Verhandl. holl. maatsch. wetensch. Haarl., xvi: 58–59. *Pl.* 3, *figs.* 19, 20.
1865. " Urwelt der Schweiz, 472.
1865. Lyell. Elem. geol., 6th ed., 249. *Fig.* 181*d*.
1872. Heer. Monde prim. Suisse, 575.
1876. " Prim. world Switz., ii: 132.
1879. " Urwelt der Schweiz, 2e aufl., 499.

4488. Hister maculigerus. (Histeridæ.)

Locality: Oeningen, Baden. Horizon: Tortonian.

1862.	Heer.	Verhandl. holl. maatsch. wetensch. Haarl., xvi: 59–60. *Pl.* 3, *fig.* 22.
1865.	"	Urwelt der Schweiz, 382.
1872.	"	Monde prim. Suisse, 468.
1876.	"	Prim. world Switz., ii: 39.
1879.	"	Urwelt der Schweiz, 2^e aufl., 407.

4489. Hister marmoratus. (Histeridæ.)

Locality: Oeningen, Baden. Horizon: Tortonian.

1862.	Heer.	Verhandl. holl. maatsch. wetensch. Haarl., xvi: 59. *Pl.* 3, *fig.* 21.
1885.	Scudder.	Zittel, Handb. palaeont., i, th. ii: 799. *Fig.* 1046.
1886.	"	Zittel-Barrois, Traité de paléont., ii: 799. *Fig.* 1063.

4490. Hister mastodontis. (Histeridæ.)

Compared with H. major L., Southern Europe.

Locality: Oeningen, Baden. Horizon: Tortonian.

1862.	Heer.	Verhandl. holl. maatsch. wetensch. Haarl., xvi: 57–58. *Pl.* 3, *figs.* 16, 16*b*.
1865.	"	Urwelt der Schweiz, 382. *Fig.* 276, on *p.* 381.
1872.	"	Monde prim. Suisse, 468. *Fig.* 276 on *p.* 467.
1876.	"	Prim. world Switz., ii: 39. *Fig.* 276 on *p.* 38.
1879.	"	Urwelt der Schweiz, 2^e aufl., 407. *Fig.* 318.

4491. Hister morosus. (Histeridæ.)

Locality: Oeningen, Baden. Horizon: Tortonian.

1862.	Heer.	Verhandl. holl. maatsch. wetensch. Haarl., xvi: 60. *Pl.* 3, *fig.* 24.

4492. Hister vetustus. (Histeridæ.)

Locality: Oeningen, Baden. Horizon: Tortonian.

1862.	Heer.	Verhandl. holl. maatsch. wetensch. Haarl., xvi: 58. *Pl.* 3, *fig.* 18.

4493. Homalium ——. (Staphylinidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1845.	Berendt.	Bernst. befindl. organ. reste vorw., i: 56 (Omalium).

4494. Homalium protogeæ. (Staphylinidæ.)

Locality: Radoboj, Croatia. Horizon: Mayencian.

1847.	Heer.	Insektenf. tertiärg. Oeningen, i: 34–35 (Omalium). *Pl.* 1, *fig.* 10.
1852.	Giebel.	Deutschl. petref., 654.
1856.	"	Insect. d. vorwelt, 74.

4495. Homalota recisa. (Staphylinidæ.)

Locality: Green River, Wyo. Horizon: Oligocene.

1890.	Scudder.	Tert. ins. N. A., 509–510. *Pl.* 8, *fig.* 14.

4496. Hopatrum ——. (Tenebrionidæ.)

Compared with H. sabulosum.

Locality: Prussian amber. Horizon: Ligurian.

1832.	Burmeister.	Handb. ent., i: 635 (Opatrum).
1836.	"	Man. ent., 577.

4497. Hopatrum ——. (Tenebrionidæ.)

Compared with H. pusillum.

Locality: Aix, France. Horizon: Ligurian.

1829. Serres. Géogn. terrains tert., 222 (Opatrum).

Hopatrum pristinum. See Gonocephalum (Hopatrum) pristinum.

4498. Hopatrum sabulosum (recent). (Tenebrionidæ.)

Locality: Hochheim, Germany. Horizon: "Kalkmergel."

[1761. Linné. Faun. suec., 150. (Opatrum.)]
1840. Meyer. Ersch u. Grüber, Encycl. d. wissensch., sect. 2, th. xviii: 539.
1885. Scudder. Zittel, Handb. palaeont., i, th. ii: 791.
1886. " Zittel-Barrois, Traité de paléont., ii: 792.

4499. Hormiscus partitus. (Anthribidæ.)

Locality: Green River, Wyo. Horizon: Oligocene.

1890. Scudder. Tert. ins. N. A., 467. *Pl.* 8, *fig.* 17.

4500. Hybosorus lividus. (Scarabæidæ.)

Locality: Oeningen, Baden. Horizon: Tortonian.

1862. Heer. Verhandl. holl. maatsch. wetensch. Haarl., xvi: 77. *Pl.* 6, *fig.* 22.

4501. Hydaticus areolatus. (Dytiscidæ.)

Locality: Oeningen, Baden. Horizon: Tortonian.

1862. Heer. Verhandl. holl. maatsch. wetensch. Haarl., xvi: 40–41. *Pl.* 2, *fig.* 20.

4502. Hydaticus zschokkeanus. (Dytiscidæ.)

Compared with H. cinereus (Linn.), Europe.

Locality: Oeningen, Baden. Horizon: Tortonian.

1861. Heer. Rech. climat pays tert., 204 (undescr.).

4503. Hydræna riparia (recent). (Hydrophilidæ.)

Locality: Hösbach, Bavaria. Horizon: Lower Pleistocene.

[1794. Kugelann. Schneiders mag., i: 579.]
1884. Flach. Käfer unterpleist. Hösbach, 8. *Pl.* 2, *fig.* 1.
1884. " Verhandl. physik.-med. gesellsch. Wurzb., n. f., xviii: 292. *Pl.* 9, *fig.* 1.

4504. Hydrobius ——. (Hydrophilidæ.)

Compared with H. fuscipes.

Locality: Aix, France. Horizon: Ligurian.

1829. Curtis. Edinb. new phil. journ., vii: 295.
1829. " Murchison-Lyell, Tert. form. Aix, 11.

4505. Hydrobius ——. (Hydrophilidæ.)

Compared with H. fuscipes.

Locality: Aix, France. Horizon: Ligurian.

1847. Hope. Trans. ent. soc. Lond., iv: 250.

4506. Hydrobius confixus. (Hydrophilidæ.)

Locality: Green River, Wyo. Horizon: Oligocene.

1890.	Scudder.	Tert. ins. N. A., 511–512. *Pl.* 7, *fig.* 25.

4507. Hydrobius couloni. (Hydrophilidæ.)

Locality: Oeningen, Baden. Horizon: Tortonian.

1862.	Heer.	Verhandl. holl. maatsch. wetensch. Haarl., xvi: 70. *Pl.* 5, *figs.* 22, 22*b*.

4508. Hydrobius decineratus. (Hydrophilidæ.)

Compared with H. fuscipes Curt., California.

Locality: Green River, Wyo. Horizon: Oligocene.

1878.	Scudder.	Bull. U. S. geol. surv. terr., iv: 761.
1890.	"	Tert. ins. N. A., 511. *Pl.* 8, *fig.* 27.

4509. Hydrobius fuscipes (recent). (Hydrophilidæ.)

Locality: Hösbach, Bavaria. Horizon: Lower Pleistocene.

[1746.	Linné.	Faun. suec., no. 766.]
1884.	Flach.	Käfer unterpleist. Hösbach, 8.
1884.	"	Verhandl. physik.-med. gesellsch. Würzb., n. f., xviii: 292.

4510. Hydrobius godeti. (Hydrophilidæ.)

Locality: Oeningen, Baden. Horizon: Tortonian.

1862.	Heer.	Verhandl. holl. maatsch. wetensch. Haarl., xvi: 70–71. *Pl.* 5. *figs.* 21, 21*b*.

4511. Hydrobius longicollis. (Hydrophilidæ.)

Locality: Radoboj, Croatia. Horizon: Tortonian.

1847.	Heer.	Insektenf. tertiärg. Oeningen, i: 56–57 (H. ungeri on pl.). *Pl.* 2, *fig.* 6.
1852.	Giebel.	Deutschl. petref., 653.
1856.	"	Insect. d. vorwelt, 53.

4512. Hydrobius nauckhoffi. (Hydrophilidæ.)

Locality: Cap Staratschin, Spitzbergen. Horizon: Miocene.

1870.	Heer.	K. svenska vetensk.-akad. handl., viii, No. 7: 74. *Pl.* 16, *figs.* 10–11.

4513. Hydrobius obsoletus. (Hydrophilidæ.)

Locality: Aix, France. Horizon: Ligurian.

1856.	Heer.	Viert. naturf. gesellsch. Zürich, i: 18. *Pl.* 1, *fig.* 19.
1874.	Oustalet.	Ann. sc. géol., v, art. 2: 128–129.

Hydrobius ungeri. See Hydrobius longicollis.

4514. Hydrochus amictus. (Hydrophilidæ.)

Compared with H. subcupreus Rand.

Locality: Scarboro', Ontario. Horizon: Pleistocene.

1890.	Scudder.	Tert. ins. N. A., 515–516. *Pl.* 1, *fig.* 47.

4515. Hydrochus relictus. (Hydrophilidæ.)

Locality: Green River, Wyo. Horizon: Oligocene.
1890. Scudder. Tert. ins. N. A., 516. *Pl.* 8, *fig.* 11.

4516. Hydronomus (?) nasutus. (Curculionidæ.)

Locality: Aix, France. Horizon: Ligurian.
1874. Oustalet. Ann. sc. géol., v, art. 2: 291–293. *Pl.* 5, *fig.* 6.

4517. Hydrophilites naujatensis. (Hydrophilidæ.)

Locality: Naujat, Greenland. Horizon: Miocene ?.
1883. Heer. Flora foss. Grönl., ii: 144 (Hydrophylites). *Pl.* 86, *fig.* 12*b*; *pl.* 109, *fig.* 10.

4518. Hydrophilopsis elongata. (Hydrophilidæ.)

Locality: Oeningen, Baden. Horizon: Tortonian.
1862. Heer. Verhandl. holl. maatsch. wetensch. Haarl., xvi: 69. *Pl.* 5, *figs.* 18, 18*b*.
1865. " Urwelt der Schweiz. *Fig.* 274 on *p.* 381.
1872. " Monde prim. Suisse. *Fig.* 274 on *p.* 467.
1876. " Prim. world Switz., ii. *Fig.* 274 on *p.* 38.
1879. " Urwelt der Schweiz, 2e aufl. *Fig.* 316 on *p.* 407.

4519. Hydrophilopsis incerta. (Hydrophilidæ.)

Locality: Aix, France. Horizon: Ligurian.
1874. Oustalet. Ann. sc. géol., v, art. 2: 125-126. *Pl.* 2, *fig.* 3.

4520. Hydrophilus ———. (Hydrophilidæ.)

Locality: Bolca, Italy. Horizon: Ligurian.
1886. Omboni. Alc. ins. foss. ven., 10. *Pl.* 3, *fig.* 14.
1886. " Atti r. ist. Ven., (6), iv: 1430. *Pl.* 3, *fig.* 14.

4521. Hydrophilus ———. (Hydrophilidæ.)

Locality: France. Horizon: Miocene.
1820. Schlotheim. Petrefactenk., 44 (Hydrophylus).

4522. Hydrophilus ———. (Hydrophilidæ.)

Locality: Florissant, Colo. Horizon: Oligocene.
1881. Scudder. Bull. U. S. geol. surv. terr., vi: 291.

4523. Hydrophilus ———. (Hydrophilidæ.)

Locality: Gurnet Bay, Isle of Wight. Horizon: Bembridge Limestone.
1879. Woodward. Geol. mag., n. s., v: 89.

4524. Hydrophilus antiquus. (Hydrophilidæ.)

Locality: Aix, France. Horizon: Ligurian.
1874. Heer. MSS.
1874. Oustalet. Ann. sc. géol., v, art. 2: 124–125. *Pl.* 2, *fig.* 2.

4525. **Hydrophilus braunii.** (Hydrophilidæ.)

Locality: Oeningen, Baden. Horizon: Tortonian.

1847.	Heer.	Insektenf. tertiärg. Oeningen, i: 55–56, 221. *Pl.* 2, *fig.* 5; *pl.* 8, *fig.* 4.
1852.	Giebel.	Deutschl. petref., 653.
1856.	"	Insect. d. vorwelt, 55.

See also Hydrous braunii.

4526. **Hydrophilus caraboides** (recent). (Hydrophilidæ.)

Locality: St. Jakob, Basel, Switzerland. Horizon: Interglacial.

[1746.	Linné.	Fauna suec., no. 214.]
1847.	Heer.	Insektenf. tertiärg. Oeningen, i: 54, 55. *Pl.* 2, *fig.* 4.
1879.	"	Urwelt der Schweiz, 2e aufl., 533.

4527. **Hydrophilus carbonarius.** (Hydrophilidæ.)

Locality: Parschlug, Styria. Horizon: Tortonian.

1847.	Heer.	Insektenf. tertiärg. Oeningen, i: 52. *Pl.* 7, *fig.* 24.
1852.	Giebel.	Deutschl. petref., 653.
1856.	"	Insect. d. vorwelt, 54–55.

4528. **Hydrophilus fraternus.** (Hydrophilidæ.)

Locality: Rott, Rhenish Prussia. Horizon: Aquitanian.

1859.	Heyden.	Palaeontogr., viii: 2. *Pl.* 2, *fig.* 6.

4529. **Hydrophilus gaudini.** (Hydrophilidæ.)

Locality: Monod, near Chexbres, Switzerland. Horizon: Aquitanian.

1862.	Heer.	Verhandl. holl. maatsch. wetensch. Haarl., xvi: 61. *Pl.* 4, *fig.* 20.
1865.	"	Urwelt der Schweiz, 381.
1872.	"	Monde prim. Suisse, 467.
1876.	"	Prim. world Switz., ii: 38.
1879.	"	Urwelt der Schweiz, 2e aufl., 406.

4530. **Hydrophilus giganteus.** (Hydrophilidæ.)

Locality: Oeningen, Baden. Horizon: Tortonian.

1862.	Heer.	Verhandl. holl. maatsch. wetensch. Haarl., xvi: 62–65. *Pl.* 4, *figs.* 1–12; *pl.* 5, *figs.* 1–2.
1865.	"	Urwelt der Schweiz, 381. *Fig.* 271.
1872.	"	Monde prim. Suisse, 467. *Fig.* 271.
1876.	"	Prim. world Switz., ii: 38. *Fig.* 271.
1879.	"	Urwelt der Schweiz, 2e aufl., 406. *Fig.* 313 on *p.* 407.

4531. **Hydrophilus knorrii.** (Hydrophilidæ.)

Locality: Oeningen, Baden. Horizon: Tortonian.

1847.	Heer.	Insektenf. tertiärg. Oeningen, i: 51–52. *Pl.* 2, *fig.* 2.
1852.	Giebel.	Deutschl. petref., 653.
1856.	"	Insect. d. vorwelt, 54.

4532. **Hydrophilus noachicus.** (Hydrophilidæ.)

Locality: Oeningen, Baden. Horizon: Tortonian.

1847.	Heer.	Insektenf. tertiärg. Oeningen, i: 52–53. *Pl.* 1, *fig.* 13.
1852.	Giebel.	Deutschl. petref., 653.
1856.	"	Insect. d. vorwelt, 55.

4533. **Hydrophilus piceus** (recent). (Hydrophilidæ.)

Locality: Lagozza, vicinity Besnate, Italy. Horizon: Quaternary.

[1746.	Linné.	Fauna suec., no. 764.]
1882.	Sordelli.	Alc. ins. foss. Lomb., 2.
1882.	“	Bull. soc. ent. ital., xiv: 225.
1885.	Scudder.	Zittel, Handb. palaeont., i, th. ii: 802.
1886.	“	Zittel Barrois, Traité de paléont., ii: 803.
1886.	“	Bull. U. S. geol. surv., No. 31: 82.

4534. **Hydrophilus rehmanni.** (Hydrophilidæ.)

Compared with Hydrochares caraboides.

Locality: Oeningen, Baden. Horizon: Tortonian.

1847.	Heer.	Insektenf. tertiärg. Oeningen, i: 53–55. *Pl.* 2, *fig.* 3.
1852.	Giebel.	Deutschl. petref., 653.
1856.	“	Insect. d. vorwelt, 55.

See also Hydrous rehmanni.

4535. **Hydrophilus ruminianus.** (Hydrophilidæ.)

Locality: Monod, near Chexbres, Switzerland. Horizon: Aquitanian.

1865.	Heer.	Urwelt der Schweiz, 381.
1872.	“	Monde prim. Suisse, 468.
1876.	“	Prim. world Switz., ii: 38.
1879.	“	Urwelt der Schweiz, 2e aufl., 406.

4536. **Hydrophilus spectabilis.** (Hydrophilidæ.)

Compared with H. piceus L., Europe

Locality: Oeningen, Baden. Horizon: Tortonian.

1847.	Heer.	Insektenf. tertiärg. Oeningen, i: 49–51. *Pl.* 2, *figs.* 1, 1*b*.
1852.	Giebel.	Deutschl. petref., 653.
1854.	Pictet	Traité de paléont., 2e éd., ii: 341. *Pl.* 40, *fig.* 12.
1856.	Giebel.	Insect. d. vorwelt, 54.
1862.	Heer.	Verhandl. holl. maatsch. wetensch. Haarl., xvi: 61. *Pl.* 4, *fig.* 21.
1865.	“	Urwelt der Schweiz, 381.
1872.	“	Monde prim. Suisse, 467.
1876.	“	Prim. world Switz., ii: 37.
1879.	“	Urwelt der Schweiz, 2e aufl., 406.

4537. **Hydrophilus stenopterus.** (Hydrophilidæ.)

Locality: Oeningen, Baden. Horizon: Tortonian.

1862.	Heer.	Verhandl. holl. maatsch. wetensch. Haarl., xvi: 65. *Pl.* 4, *fig.* 13.

4538. **Hydrophilus vexatorius.** (Hydrophilidæ.)

Locality: Oeningen, Baden. Horizon: Tortonian.

1847.	Heer.	Insektenf. tertiärg. Oeningen, i: 47–49. *Pl.* 1, *figs.* 12, 12*b*.
1852.	Giebel.	Deutschl. petref., 653.
1856.	“	Insect. d. vorwelt, 53–54.
1862.	Heer.	Verhandl. holl. maatsch. wetensch. Haarl., xvi: 62. *Pl.* 4, *figs* 14–19.

Hydrophylites naujatensis. See Hydrophilites naujatensis.

Hydrophylus ——. See Hydrophilus —— Schlotheim.

4539. **Hydroporus** ——. (Dytiscidæ.)

Locality: Hösbach, Bavaria. Horizon: Lower Pleistocene.

1884. Flach. Käfer unterpleist. Hösbach, 8.

1884. " Verhandl. physik.-med. gesellsch. Würzb., n. f., xviii: 292.

4540. **Hydroporus antiquus.** (Dytiscidæ.)

Locality: Oeningen, Baden. Horizon: Tortonian.

1862. Heer. Verhandl. holl. maatsch. wetensch. Haarl., xvi: 42. *Pl.* 2, *fig.* 15.

1865. " Urwelt der Schweiz. *Fig.* 282 on *p.* 381.

1872. " Monde prim. Suisse. *Fig.* 282 on *p.* 467.

1876. " Prim. world Switz., ii. *Fig.* 282 on *p.* 38.

1879. " Urwelt der Schweiz, 2e aufl. *Fig.* 324 on *p.* 407.

4541. **Hydroporus benzeli.** (Dytiscidæ.)

Locality: Oeningen, Baden. Horizon: Tortonian.

1862. Heer. Verhandl. holl. maatsch. wetensch. Haarl., xvi: 42–43. *Pl.* 2, *fig.* 29.

4542. **Hydrous braunii.** (Hydrophilidæ.)

Locality: Oeningen, Baden. Horizon: Tortonian.

1862. Heer. Verhandl. holl. maatsch. wetensch. Haarl., xvi: 67. *Pl.* 5, *figs.* 12–14.

See also Hydrophilus braunii.

4543. **Hydrous escheri.** (Hydrophilidæ.)

Locality: Oeningen, Baden. Horizon: Tortonian.

1862. Heer. Verhandl. holl. maatsch. wetensch. Haarl., xvi: 67–68. *Pl.* 5, *figs.* 16, 16*b*.

1865. " Urwelt der Schweiz. *Fig.* 272 on *p.* 381.

1872. " Monde prim. Suisse. *Fig.* 272 on *p.* 467.

1876. " Prim. world Switz., ii. *Fig.* 272 on *p.* 38.

1879. " Urwelt der Schweiz, 2e aufl. *Fig.* 314 on *p.* 407.

4544. **Hydrous miserandus.** (Hydrophilidæ.)

Locality: Rott, Rhenish Prussia. Horizon: Aquitanian.

1859. Heyden. Palaeontogr., viii: 2. *Pl.* 2, *fig.* 5.

4545. **Hydrous neptunus.** (Hydrophilidæ.)

Locality: Rott, Rhenish Prussia. Horizon: Aquitanian.

1866. Heyd.-Heyd. Palaeontogr., xv: 135–136. *Pl.* 22, *fig.* 5.

1866. " Käfer u. polypen, 5–6. *Pl.* 1, *fig.* 5.

4546. **Hydrous ovalis.** (Hydrophilidæ.)

Locality: Oeningen, Baden. Horizon: Tortonian.

1862. Heer. Verhandl. holl. maatsch. wetensch. Haarl., xvi: 68. *Pl.* 6, *fig.* 1.

4547. **Hydrous rehmanni.** (Hydrophilidæ.)

Locality: Oeningen, Baden. Horizon: Tortonian.

1862. Heer. Verhandl. holl. maatsch. wetensch. Haarl., xvi: 65–66. *Pl.* 5, *figs.* 3–11.

See also Hydrophilus rehmanni.

4548. Hygronoma deleta. (Staphylinidæ.)

Compared with H. dimidiata Grav., Europe.

Locality: Aix, France. Horizon: Ligurian.

1874. Oustalet. Ann. sc. géol., v, art. 2: 179–180. *Pl.* 3, *fig.* 5.

4549. Hylastes? squalidens. (Scolytidæ.)

Locality: Scarboro', Ontario. Horizon: Postpliocene.

1890. Scudder. Tert. ins. N. A., 468–469. *Pl.* 1, *figs.* 23–25.
See also ——— ——— (Scolytidæ) Scudder.

4550. Hylecœtus cylindricus. (Lymexylidæ.)

Compared with H. dermestoides (L.).

Locality: Oeningen, Baden. Horizon: Tortonian

1865. Heer. Urwelt der Schweiz, 362, 377.
1872. " Monde prim. Suisse, 444, 462.
1876. " Prim. world Switz., ii: 16, 33.
1879. " Urwelt der Schweiz, 2e aufl., 387, 403.
1886. Scudder. Bull. U. S. geol. surv., No. 31: 75.

4551. Hylesinites electrinus. (Scolytidæ.)

Compared with Hylesinus ligniperda.

Locality: Prussian amber. Horizon: Ligurian.

1813. Germar. Germ., Mag. d. entom., i: 15.
1856. Giebel. Insect. d. vorwelt, 148.
1888. Schlechtend. Zeitschr. ges. naturw., lxi: 486–487.

4552. Hylesinus ———. (Scolytidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1845. Berendt. Bernst. befindl. organ. reste vorw., i: 56.

4553. Hylesinus ———. (Scolytidæ.)

Locality: Brunstatt, Alsatia. Horizon: Middle Oligocene.

1890. Foerster. In litt.

4554. Hylesinus ———. (Scolytidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1856. Menge. Progr. petrischule Danzig, 1856: 22.

4555. Hylesinus ———. (Scolytidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1829. Serres. Géogn. terrains tert., 241.

4556. Hylesinus facilis. (Scolytidæ.)

Locality: Aix, France. Horizon: Ligurian.

1856. Heer. Viert. naturf. gesellsch. Zürich, i: 25. *Pl.* 1, *fig.* 5.
1874. Oustalet. Ann. sc. géol., v, art. 2: 315. *Pl.* 2, *fig.* 7.
1885. Scudder. Zittel, Handb. palaeont., i, th. ii: 787. *Fig.* 1006.
1886. " Zittel-Barrois, Traité de paléont., ii: 787. *Fig.* 1023.

Hylobinum tortomanus. See Hylobius tortomanus.

4557. **Hylobius** ———. (Curculionidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1845.	Berendt.	Bernst. befindl. organ. reste vorw., i: 56.

4558. **Hylobius antiquus.** (Curculionidæ.)

Locality: Rott, Rhenish Prussia. Horizon: Aquitanian.

1866.	Heyd.-Heyd.	Palaeontogr., xv: 149. *Pl.* 23, *figs.* 11, 12.
1866.	“	Käfer u. polypen, 19. *Pl.* 2, *figs.* 11, 12.

4559. **Hylobius carbo.** (Curculionidæ.)

Locality: Aix, France. Horizon: Ligurian.

1874.	Oustalet.	Ann. sc. géol., v, art. 2: 275–277. *Pl.* 4, *fig.* 7.

4560. **Hylobius deletus.** (Curculionidæ.)

Locality: Corent, France. Horizon: Aquitanian.

1870.	Oustalet.	Ann. sc. géol., ii, art. 3: 70–71. *Pl.* 1, *fig.* 8.

4561. **Hylobius morosus.** (Curculionidæ.)

Locality: Aix, France. Horizon: Ligurian.

1874.	Oustalet.	Ann. sc. géol., v, art. 2: 271–275. *Pl.* 3, *fig.* 18; *pl.* 4, *fig.* 13.

See also Curculionites morosus, Liparus ——— Curtis cf. punctatus, L. primævus.

4562. **Hylobius provectus.** (Curculionidæ.)

Compared with H. picivorus.

Locality: Green River, Wyo. Horizon: Oligocene.

1876.	Scudder.	Bull. U. S. geol. surv. terr., ii: 86.
1878.	“	Bull. U. S. geol. surv. terr., iv: 767.
1890.	“	Tert. ins. N. A., 473–474. *Pl.* 8, *figs.* 37, 41.

4563. **Hylobius rugosus.** (Curculionidæ.)

Compared with H. pineti.

Locality: Dürnten, Switzerland. Horizon: Interglacial.

1858.	Heer.	Arch. sc. phys. nat., n. p., ii: 322.
1865.	“	Urwelt der Schweiz, 501. *Fig.* 356.
1872.	“	Monde prim. Suisse, 615. *Fig.* 356 ou *p.* 614.
1876.	“	Prim. world Switz., ii: 168. *Fig.* 356.
1879.	“	Urwelt der Schweiz, 2^e aufl., 531. *Fig.* 399.

4564. **Hylobius? solieri.** (Curculionidæ.)

Locality: Aix, France. Horizon: Ligurian.

1874.	Oustalet.	Ann. sc. géol., v, art. 2: 277–278.

See also Rhynchænus? solieri.

4565. **Hylobius tortomanus** (borings in Pinus sylvestris). (Curculionidæ.)

Locality: Monte Vaticano, Italy. Horizon: Tortonian.

1876.	Ponzi.	Foss. monte Vat., 10 (Hylobinum). *Pl.* 1, *fig.* 9.
1876.	“	Atti accad. linc., (2), iii: 932. *Pl.* 1, *fig.* 9.
1876.	“	Ins. lign. monte Vat., 3.
1876.	“	Atti accad. linc., (2), iii: —.

4566. Hylotrupes senex. (Cerambycidæ.)

Locality: Rott, Rhenish Prussia. Horizon: Aquitanian.

1859.	Heyden.	Palaeontogr., viii: 10. *Pl.* 1, *fig.* 3.

4567. Hylurgus ——. (Scolytidæ.)

Locality: Aix, France. Horizon: Ligurian.

1829.	Serres.	Géogn. terrains tert., 225.

4568. Hypera ——. (Curculionidæ.)

Locality: Aix, France. Horizon: Ligurian.

1829.	Curtis.	Edinb. new phil. journ., vii: 295.
1829.	"	Murchison-Lyell, Tert. form. Aix, 11.

4569. Hypera ——. (Curculionidæ.)

Locality: Aix, France. Horizon: Ligurian.

1829.	Serres.	Géogn. terrains tert., 224.

4570. Ilybius ——. (Dytiscidæ.)

Locality: Oeningen, Baden. Horizon: Tortonian.

1888.	Schöberlin.	Soc. entom., iii: 42.

4571. Ilybius ater? (recent). (Dytiscidæ.)

Locality: Hösbach, Bavaria. Horizon: Lower Pleistocene.

[1774.	DeGeer.	Ins., iv: 401.]
1884.	Flach.	Käfer unterpleist. Hösbach, 8.
1884.	"	Verhandl. physik.-med. gesellsch. Würzb., n. f., xviii: 292.

4572. Ips ——. (Nitidulidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1825.	Guérin.	Dict. class. d'hist. nat., viii: 580.
1829.	Serres.	Géogn. terrains tert., 241.

4573. Ischnodes gracilis. (Elateridæ.)

Locality: Oeningen, Baden. Horizon: Tortonian.

1847.	Heer.	Insektenf. tertiärg. Oeningen, i: 133–134. *Pl.* 4, *fig.* 3.
1852.	Giebel.	Deutschl. petref., 651.
1856.	"	Insect. d. vorwelt, 97–98.

4574. Labidostomis pyrrha. (Chrysomelidæ.)

Locality: Rott, Rhenish Prussia. Horizon: Aquitanian.

1866.	Heyd.-Heyd.	Palaeontogr., xv: 154–155. *Pl.* 24, *fig.* 11.
1866.	"	Käfer u. polypen, 24–25. *Pl.* 3, *fig.* 11.

4575. Laccobius elongatus. (Hydrophilidæ.)

Locality: Green River, Wyo. Horizon: Oligocene.

1878.	Scudder.	Bull. U. S. geol. surv. terr., iv: 761.
1890.	"	Tert. ins. N. A., 513. *Pl.* 7, *figs.* 27, 28.

4576. Laccobius excitatus. (Hydrophilidæ.)

Locality: Rott, Rhenish Prussia. Horizon: Aquitanian.

1866. Heyd.-Heyd. Palaeontogr., xv: 135. *Pl.* 22, *fig.* 3.
1866. " Käfer u. polypen, 5. *Pl.* 1, *fig.* 3.

4577. Laccobius priscus. (Hydrophilidæ.)

Locality: Corent, France. Horizon: Aquitanian.

1870. Oustalet. Ann. sc. géol., ii, art. 3: 59–60. *Pl.* 1, *fig.* 3.

4578. Laccobius vetustus. (Hydrophilidæ.)

Locality: Aix, France. Horizon: Ligurian.

1874. Oustalet. Ann. sc. géol., v, art. 2: 130–131. *Pl.* 1, *fig.* 11.

4579. Laccophilus ———. (Dytiscidæ.)

Compared with L. maculosus.

Locality: White River, Utah. Horizon: Oligocene.

1876. Scudder. Bull. U. S. geol. surv. terr., ii: 78.
1877. " Bull. U. S. geol. surv. terr., iii: 759.
1890. " Tert. ins. N. A., 517. *Pl.* 5, *figs.* 116, 117.

4580. Laccophilus parvulus. (Dytiscidæ.)

Locality: Cap Staratschin, Spitzbergen. Horizon: Miocene.

1870. Heer. K. svenska vetensk. akad. handl., viii, No. 7: 73. *Pl.* 5, *figs.* 56*cd*.

4581. Lacon murinus (recent). (Elateridæ.)

Locality: Mundesley, England. Horizon: Pleistocene.

[1758. Linné. Syst. nat., i, pt. 2: 655.]
1888. Bell. Entom., xxi: 2.

4582. Lacon primordialis. (Elateridæ.)

Locality: Oeningen, Baden. Horizon: Tortonian.

1847. Heer. Insektenf. tertiärg. Oeningen, i: 138–139. *Pl.* 4, *fig.* 7.
1852. Giebel. Deutschl. petref., 651.
1856. " Insect. d. vorwelt, 96.

4583. Lamia ———. (Cerambycidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1845. Berendt. Bernst. befindl. organ. reste vorw., i: 56.

4584. Lamia antiqua. (Cerambycidæ.)

Locality: Oeningen, Baden. Horizon: Tortonian.

1879. Heer. Urwelt der Schweiz, 2ᵉ aufl., 401. *Fig.* 257 on *p.* 384.

4585. Lamia petrificata. (Cerambycidæ.)

Locality: Rott, Rhenish Prussia. Horizon: Aquitanian.

1866. Heyd.-Heyd. Palaeontogr., xv: 154. *Pl.* 24, *fig.* 10.
1866. " Käfer u. polypen, 24. *Pl.* 3, *fig.* 10.

4586. Lampyris ? ———. (Lampyridæ.)

Locality : Prussian amber. Horizon : Ligurian.

1845. Berendt. Bernst. befindl. organ. reste vorw., i: 56.

4587. Lampyris orciluca. (Lampyridæ.)

Locality: Oeningen, Baden. Horizon: Tortonian.

1865. Heer. Urwelt der Schweiz, 377.
1872. " Monde prim. Suisse, 462.
1876. " Prim. world Switz., ii: 33.
1879. " Urwelt der Schweiz, 2e aufl., 403.

4588. Laparocerus wollastoni. (Otiorhynchidæ.)

Compared with L. morio Schönh.

Locality : St. Jorge, Madeira. Horizon: Diluvial.

1857. Heer. Neue denkschr. allg. schweiz. gesellsch. ges. naturwiss., xv, art. 2: 14, note. *Pl.* 2, *fig.* 34.

4589. Larinus ———. (Curculionidæ.)

Locality: Aix, France. Horizon: Ligurian.

1832. Burmeister. Handb. ent., i: 639.
1836. " Man. ent., 580.
See also Rhinobatus ——— Serres.

4590. Larinus ———. (Curculionidæ.)

Locality: Brunstatt, Alsatia. Horizon : Middle Oligocene.

1888. Foerster. Mitth. comm. geol. Elsass Lothr., i: 165.

4591. Larinus ———. (Curculionidæ.)

Locality: ———. Horizon: ———.

1846. Giebel. Paläozool., 283.

4592. Larinus bronni. (Curculionidæ.)

Locality: Rott, Rhenish Prussia. Horizon: Aquitanian.

1866. Heyd.-Heyd. Palaeontogr., xv: 150. *Pl.* 24, *fig.* 1.
1866. " Käfer u. polypen, 20. *Pl.* 3, *fig.* 1.
1885. Scudder. Zittel, Handb. palaeont., i, tb. ii: 798. *Fig.* 1040.
1886. " Zittel-Barrois, Traité de paléont., ii: 788. *Fig.* 1025.

4593. Larinus ovalis. (Curculionidæ.)

Compared with L. jaceæ Fabr., Europe.

Locality : Oeningen, Baden. Horizon: Tortonian.

1861. Heer. Rech. climat pays tert., 204 (undescr.).

4594. Lasia primitiva. (Coccinellidæ.)

Locality: Rott, Rhenish Prussia. Horizon : Aquitanian.

1866. Heyd.-Heyd. Palaeontogr., xv: 157. *Pl.* 24, *fig.* 21.
1866. " Käfer u. polypen, 27. *Pl.* 3, *fig.* 21.

4595. Lathridius ———. (Lathridiidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1845. Berendt. Bernst. befindl. organ. reste vorw., i: 56.

4596. Lathrobium ———. (Staphylinidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1845. Berendt. Bernst. befindl. organ. reste vorw., i: 56.

4597. Lathrobium ———. (Staphylinidæ.)

Locality: Aix, France. Horizon: Ligurian.

1829. Curtis. Edinb. new phil. journ., vii: 295. *Pl.* 6, *fig.* 1.
1829. " Murchison-Lyell, Tert. form. Aix, 11. *Pl.* 6, *fig.* 1.
1839. Mantell. Wonders of geology, i: 248. *Fig.* 3.
1854. " Medals of creation, 2d ed., ii: 553. *Fig.* 183·3.
See also Xantholinus westwoodianus, Lathrobium provinciale.

4598. Lathrobium abscessum. (Staphylinidæ.)

Compared with L. elongatum.

Locality: Green River, Wyo. Horizon: Oligocene.

1876. Scudder. Bull. U. S. geol. surv. terr., ii: 79.
1878. " Bull. U. S. geol. surv. terr., iv: 762.
1890. " Tert. ins. N. A., 505–506. *Pl.* 8, *figs.* 15, 21.

4599. Lathrobium interglaciale. (Staphylinidæ.)

Compared with L. grandis LeC.

Locality: Scarboro', Ontario. Horizon: Postpliocene.

1890. Scudder. Tert. ins. N. A., 506. *Pl.* 1, *fig.* 38.

4600. Lathrobium œningense. (Staphylinidæ.)

Locality: Oeningen, Baden. Horizon: Tortonian.

1862. Heer. Verhandl. holl. maatsch. wetensch. Haarl., xvi: 47. *Pl.* 3, *figs.* 3, 3*b–d*.

4601. Lathrobium provinciale. (Staphylinidæ.)

Locality: Aix, France. Horizon: Ligurian.

1856. Giebel. Insect. d. vorwelt, 72.
See also Lathrobium ——— Curtis, etc.

4602. Lebia ———. (Carabidæ.)

Locality: Prussian amber. Horizon: Liguria

1845. Motschulsky. Bull. soc. imp. nat. Mosc., xviii, ii: 98.

4603. Lebia amissa. (Carabidæ.)

Locality: Salzhausen, Germany. Horizon: Miocene.

1865. Heyd.-Heyd. Palaeontogr., xiv: 31. *Pl.* 9, *fig.* 13.

4604. Lebina resinata. (Carabidæ.)

Compared with Lebia quadrimaculata.

Locality: Prussian amber. Horizon: Ligurian.

1813. Germar. Germ., Mag. entom., i: 13.
1888. Schlechtend. Zeitschr. ges. naturw., lxi: 475–477. *Figs.* 1, 2.
See also Dromius resinatus.

4605. Leistotrophus patriarchicus. (Staphylinidæ.)

Locality: White River, Colorado or Utah. Horizon: Oligocene.

1876.	Scudder.	Bull. U. S. geol. surv. terr., ii: 78–79.
1877.	"	Bull. U. S. geol. surv. terr., iii: 759.
1890.	"	Tert. ins. N. A., 507. *Pl.* 5, *fig.* 112.

4606. Lema ———. (Chrysomelidæ.)

Locality: Riedisheim, Alsatia. Horizon: Middle Oligocene.

1885.	Foerster.	Tagebl. versamml. deutsch naturf., lviii: 392.
1885.	"	Mitth. oberelsäss. tertiär, 7.
1888.	"	Mitth. comm. geol. Elsass-Lothr., i: 165.
1889.	"	Mitth. comm. geol. Elsass-Lothr., ii: 102.

4607. Lema tumulata. (Chrysomelidæ.)

Locality: Salzhausen, Germany. Horizon: Miocene.

1865.	Heyd.-Heyd.	Palaeontogr., xiv: 33. *Pl.* 9, *fig.* 19.

4608. Lema vetusta. (Chrysomelidæ.)

Compared with L. merdigera L.

Locality: Oeningen, Baden. Horizon: Tortonian.

1865.	Heer.	Urwelt der Schweiz, 372. *Fig.* 240 on *p.* 371.
1872.	"	Monde prim. Suisse, 456. *Fig.* 240 on *p.* 455.
1876.	"	Prim. world Switz., ii: 28. *Fig.* 240 on *p.* 27.
1879.	"	Urwelt der Schweiz, 2^{e} aufl., 398. *Fig.* 282 on *p.* 397.

4609. Lepitrix germanica. (Scarabæidæ.)

Compared with L. lineata F., Southern Africa.

Locality: Oeningen, Baden. Horizon: Tortonian.

1862.	Heer.	Verhandl. holl. maatsch. wetensch. Haarl., xvi: 80. *Pl.* 6, *fig.* 19.
1865.	"	Urwelt der Schweiz, 380. *Fig.* 264 on *p.* 378.
1872.	"	Monde prim. Suisse, 466. *Fig.* 264 on *p.* 463.
1876.	"	Prim. world Switz., ii: 37. *Fig.* 264 on *p.* 34.
1879.	"	Urwelt der Schweiz, 2^{e} aufl., 406. *Fig.* 306 on *p.* 404.

4610. Leptura ———. (Cerambycidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1845.	Berendt.	Bernst. befindl. organ. reste vorw., i: 56.

4611. Leptura ———. (Cerambycidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1856.	Menge.	Progr. petrischule Danzig, 1856: 21.

4612. Leptura ——— (larva). (Cerambycidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1856.	Menge.	Progr. petrischule Danzig, 1856: 23.

4613. Licinus ———. (Carabidæ.)

Locality: Lexden, England. Horizon: Pleistocene.

1863.	Wollaston.	Quart. journ. geol. soc. Lond., xix, i: 401, No. 6.
1888.	Bell	Entom., xxi: 2.

4614. **Limnichus** ——. (Byrrhidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1845.	Berendt.	Bernst. befindl. organ. reste vorw., i: 56.

4615. **Limonius** ——. (Elateridæ.)

Locality: Prussian amber. Horizon: Ligurian.

1845.	Berendt.	Bernst. befindl. organ. reste vorw., i: 56.

4616. **Limonius optabilis.** (Elateridæ.)

Localities: Oeningen, Baden; Rhine, Germany. Horizons: Tortonian, Aquitanian?.

1847.	Heer.	Insektenf. tertiärg. Oeningen, i: 137–138. *Pl.* 4, *fig.* 6.
1852.	Giebel.	Deutschl. petref., 651.
1856.	"	Insect. d. vorwelt, 95–96.
1862.	Heyden.	Palaeontogr., x: 69.

4617. **Lina populeti.** (Chrysomelidæ.)

Compared with L. populi.

Localities: Oeningen, Baden; Rhine, Germany. Horizons: Tortonian, Aquitanian?

1847.	Heer.	Insektenf. tertiärg. Oeningen, i: 207–208. *Pl.* 7, *fig.* 7.
1852.	Giebel.	Deutschl. petref., 648.
1856.	"	Insect. d. vorwelt, 121–122.
1858.	Heer.	Bull. séances soc. vaud. sc. nat., v: 150.
1862.	Heyden.	Palaeontogr., x: 73–74.
1865.	Heer.	Urwelt der Schweiz, 362, 372. *Fig.* 237.
1872.	"	Monde prim. Suisse, 444, 456. *Fig.* 237 on *p.* 455.
1876.	"	Prim. world Switz., ii: 16, 26. *Fig.* 237 on *p.* 27.
1879.	"	Urwelt der Schweiz, 2^{e} aufl., 397. *Fig.* 279.

4618. **Lina sociata.** (Chrysomelidæ.)

Locality: Rott, Rhenish Prussia. Horizon: Aquitanian.

1866.	Heyd.-Heyd.	Palaeontogr., xv: 155. *Pl.* 24, *fig.* 13.
1866.	"	Käfer u. polypen, 25. *Pl.* 3, *fig.* 13.

4619. **Lina wetteravica.** (Chrysomelidæ.)

Localities: Salzhausen, Hessenbruckener Hammers bei Laubach, Germany.
Horizon: Aquitanian.

1862.	Heyden.	Palaeontogr., x: 73. *Pl.* 10, *fig.* 24.
1865.	Heyd.-Heyd.	Palaeontogr., xiv: 35.

4620. **Liparus** ——. (Otiorhynchidæ.)

Compared with L. anglicanus Marsh.

Locality: Aix, France. Horizon: Ligurian.

1829.	Curtis.	Edinb. new phil. journ., vii: 295.
1829.	"	Murchison-Lyell, Tert. form. Aix, 11.

4621. **Liparus** ——. (Otiorhynchidæ.)

Compared with L. punctatus.

Locality: Aix, France. Horizon: Ligurian.

1829.	Curtis.	Edinb. new phil. journ., vii: 295. *Pl.* 6, *fig.* 3.
1829.	"	Murchison-Lyell, Tert. form. Aix, 11. *Pl.* 6, *fig.* 3.
1839.	Mantell.	Wonders of geology, i: 248. *Fig.* 5.
1854.	"	Medals of creation, 2d ed., ii: 558. *Fig.* 183·5.

See also Curculionites morosus, Liparus primævus, Hylobius morosus.

4622. Liparus primævus. (Otiorhynchidæ.)

Locality: Aix, France. Horizon: Ligurian.

1856.	Giebel.	Insect. d. vorwelt, 140.

See also Liparus ——— Curtis cf. punctatus, Hylobius morosus, Curculionites morosus.

4623. Listronotus muratus. (Curculionidæ.)

Locality: Green River, Wyo. Horizon: Oligocene.

1890.	Scudder.	Tert. ins. N. A., 474. *Pl.* 8, *fig.* 23.

Lithocaris varicolor. See Lithocharis varicolor.

4624. Lithocharis varicolor. (Staphylinidæ.)

Locality: Aix, France. Horizon: Ligurian.

1856.	Heer.	Viert. naturf. gesellsch. Zürich, i: 15-16 (Lithocaris). *Pl.* 1, *fig.* 2.
1874.	Oustalet.	Ann. sc. géol., v, art. 2: 147-149. *Pl.* 5, *fig.* 16.

4625. Lithoplanes ———. (Staphylinidæ.)

Locality: Aix, France. Horizon: Ligurian.

1886.	Scudder.	Bull. U. S. geol surv., No. 31: 81, note.

See also Erynnis deleta, E. elongata.

4626. Lixus ———. (Curculionidæ.)

Locality: Aix, France. Horizon: Ligurian.

1847.	Hope.	Trans. ent. soc. Lond., iv: 251.

4627. Lixus œningensis. (Curculionidæ.)

Compared with L. augustatus F.

Locality: Oeningen, Baden. Horizon: Tortonian.

1865.	Heer.	Urwelt der Schweiz, 374.
1872.	“	Monde prim. Suisse, 459.
1876.	“	Prim. world Switz., ii: 30.
1879.	“	Urwelt der Schweiz, 2^{e} aufl., 400.

4628. Lixus rugicollis. (Curculionidæ.)

Compared with L. gemellatus Sch.

Locality: Oeningen, Baden. Horizon: Tortonian.

1847.	Heer.	Insektenf. tertiärg. Oeningen, i: 192-193. *Pl.* 6, *fig.* 14.
1852.	Giebel.	Deutschl. petref., 648.
1856.	“	Insect. d. vorwelt, 144.
1865.	Heer.	Urwelt der Schweiz, 374.
1872.	“	Monde prim. Suisse, 459.
1876.	“	Prim. world Switz., ii: 30.
1879.	“	Urwelt der Schweiz, 2^{e} aufl., 400.

4629. Lomatus hislopi. (Buprestidæ.)

Locality: Tákli, Nágpur, Central India. Horizon: ———.

1860.	Murray.	Quart. journ. geol. soc. Lond., xvi: 182-183. *Pl.* 10, *fig.* 66.
1879.	Medl.-Blanf.	Geol. India, i: 314.

4630. Loricera glacialis. (Carabidæ.)

Compared with L. neoscotica LeC.

Locality: Scarboro', Ontario. Horizon: Interglacial.

1877. Scudder. Bull. U. S. geol. surv. terr., iii: 763.
1890. " Tert. ins. N. A., 533. *Pl.* 1, *figs.* 50, 57.

4631. Loricera ? lutosa. (Carabidæ.)

Locality: Scarboro', Ontario. Horizon: Postpliocene.

1890. Scudder. Tert. ins. N. A., 533–534. *Pl.* 1, *fig.* 32.

4632. Loxandrus gelidus. (Carabidæ.)

Compared with L. agilis LeC and L. erraticus LeC.

Locality: Scarboro', Ontario. Horizon: Interglacial.

1877. Scudder. Bull. U. S. geol. surv. terr., iii: 763–764.
See also Pterostichus gelidus.

4633. Lucanus ——. (Lucanidæ.)

Locality: ——. Horizon: ——.

1846. Giebel. Paläozool., 288.

4634. Lucanus ——. (Lucanidæ.)

Locality: Rhine, Germany. Horizon: Aquitanian ?.

1831. Goldfuss. Verhandl. leop.-carol. akad. naturf, vii, i: 118.

4635. Luciola extincta. (Lampyridæ.)

Locality: Rott, Rhenish Prussia. Horizon: Aquitanian.

1862. Heyden. Palaeontogr., x: 69. *Pl.* 10, *fig.* 15.

4636. Lycoperdina ——. (Endomychidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1845. Berendt. Bernst. befindl. organ. reste vorw., i: 56.

4637. Lycoperdina (vic.) **——.** (Endomychidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1856. Menge. Progr. petrischule Danzig, 1856: 21.

4638. Lyctus ——. (Ptinidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1829. Serres. Géogn. terrains tert., 241.

4639. Lycus ——. (Lampyridæ.)

Locality: Prussian amber. Horizon: Ligurian.

1845. Berendt. Bernst. befindl. organ. reste vorw., i: 56.

Lymexilon ——. See Lymexylon —— Berendt.

4640. Lymexylon ? ——. (Lymexylidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1845. Berendt. Bernst. befindl. organ. reste vorw., i: 56 (Lymexilon).

4641. Lymexylon ——— (larva). (Lymexylidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1856. Menge. Progr. petrischule Danzig, 1856: 23.

4642. Lytta æsculapii. (Meloidæ.)

Compared with L. vesicatoria L.

Locality: (Oeningen ?, Baden). Horizon: Tortonian.

1847. Heer. Insektenf. tertiärg. Oeningen, i: 155–159. *Pl.* 5, *figs.* 4, 5.
1852. Giebel. Deutschl. petref., 650.
1856. " Insect. d. vorwelt, 105–106.
1865. Heer. Urwelt der Schweiz, 376. *Fig.* 255.
1872. " Monde prim. Suisse, 462. *Fig.* 255 on *p.* 461.
1876. " Prim. world Switz., ii: 32. *Fig.* 255.
1879. " Urwelt der Schweiz, 2^{e} aufl., 401. *Fig.* 297 on *p.* 402.
1885. Scudder. Zittel, Handb. palaeont., i, th. ii: 790. *Fig.* 1013.
1886. " Zittel-Barrois, Traité de paléont., ii: 790. *Fig.* 1031.

See also Meloe proscarabæus.

4643. Magdalinus deucalionis. (Curculionidæ.)

Locality: Rott, Rhenish Prussia. Horizon: Aquitanian.

1866. Heyd.-Heyd. Palaeontogr., xv: 151–152. *Pl.* 24, *fig.* 4.
1866. " Käfer u. polypen, 21–22. *Pl.* 3, *fig.* 4.

4644. Magdalinus protogenius. (Curculionidæ.)

Locality: Rott, Rhenish Prussia. Horizon: Aquitanian.

1866. Heyd.-Heyd. Palaeontogr., xv: 151. *Pl.* 24, *fig.* 3.
1866. " Käfer u. polypen, 21. *Pl.* 3, *fig.* 3.

4645. Malachius ———. (Malachidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1845. Berendt. Bernst. befindl. organ. reste vorw., i: 56.

4646. Malachius ———. (Malachidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1856. Menge. Progr. petrischule Danzig, 1856: 21.

4647. Malachius vertumni. (Malachidæ.)

Locality: Oeningen, Baden. Horizon: Tortonian.

1847. Heer. Insektenf. tertiärg. Oeningen, i: 150–152 (vertummni). *Pl.* 5, *figs.* 1, 2.
1852. Giebel. Deutschl. petref., 650.
1856. " Insect. d. vorwelt, 103.

Malachius vertummni. See Malachius vertumni.

4648. Malthinus ———. (Lampyridæ.)

Locality: Prussian amber. Horizon: Ligurian.

1845. Berendt. Bernst. befindl. organ. reste vorw., i: 56.

4649. Malthodes ———. (Lampyridæ.)

Locality: Brunstatt, Alsatia. Horizon: Middle Oligocene.

1890. Foerster. In litt.

4650. Meleus ———. (Byrsopidæ.)

Locality: Aix, France. Horizon: Ligurian.

1829.	Serres.	Géogn. terrains tert., 223.

4651. Meligethes ———. (Nitidulidæ.)

Locality: Brunstatt, Alsatia. Horizon: Middle Oligocene.

1890.	Foerster.	In litt.

4652. Meloe ———. (Meloidæ.)

Locality: Rhine, Germany. Horizon: Aquitanian?

1831.	Goldfuss.	Verhandl. leop.-carol. akad. naturf., vii, i: 118.

4653. Meloe? ——— (larva). (Meloidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1856.	Menge.	Progr. petrischule Danzig, 1856: 23–24.

4654. Meloe podalirii. (Meloidæ.)

Locality: Radoboj, Croatia. Horizon: Mayencian.

1847.	Heer.	Insektenf. tertiärg. Oeningen, i: 159–160. *Pl.* 5, *fig.* 7.
1852.	Giebel.	Deutschl. petref., 650.
1856.	"	Insect. d. vorwelt, 106.

4655. Meloe proscarabæus. (Meloidæ.)

Locality: Oeningen, Baden. Horizon: Tortonian.

"1805.	Karg.	Denkschr. vaterl. gesellsch. ärtze u. naturf. Schwabens, 40."
1847.	Heer.	Insektenf. tertiärg. Oeningen, i: 159 (may = Lytta æsculapii).

See also Lytta æsculapii.

4656. Melolontha ———. (Scarabæidæ.)

Locality: Oeningen, Baden. Horizon: Tortonian.

1834.	Keferstein.	Naturg. erdkörp., ii: 331.

4657. Melolontha ———. (Scarabæidæ.)

Locality: Aix, France. Horizon: Ligurian.

1829.	Serres.	Géogn. terrains tert., 221.

4658. Melolontha greithiana. (Scarabæidæ.)

Compared with M. (Catalasis) australis Schönh.

Locality: Greith, Hohe-Rhönen, Germany. Horizon: Aquitanian.

1847.	Heer.	Insektenf. tertiärg. Oeningen, i: 67–68. *Pl.* 8, *fig.* 5.
1852.	Giebel.	Deutschl. petref., 652.
1856.	"	Insect. d. vorwelt, 32.
1865.	Heer.	Urwelt der Schweiz, 380. *Fig.* 263 on *p.* 378.
1872.	"	Monde prim. Suisse, 466. *Fig.* 263 on *p.* 463.
1876.	"	Prim. world Switz., ii: 37. *Fig.* 263, on *p.* 34.
1879.	"	Urwelt der Schweiz, 2e aufl., 406. *Fig.* 305, on *p.* 404.

4659. Melolontha hippocastani (recent). (Scarabæidæ.)

Locality: Schwerzenbach, Switzerland. Horizon: Glacial clay.

[1801.	Fabricius.	Syst. eleuth., ii: 162.]
1879.	Heer.	Urwelt der Schweiz, 2e aufl., 581.
1885.	Scudder.	Zittel, Handb. palaeont., i, th. ii: 794.
1886.	"	Zittel-Barrois, Traité de paléont., ii: 795.
1886.	"	Bull. U. S. geol. surv., No. 31: 74.

4660. Melolontha solitaria. (Scarabæidæ.)

Locality: Krottensee, Bohemia. Horizon: Aquitanian.

1877.	Novák.	Sitzungsb. k. akad. wiss. Wien, lxxvi: 92–93. *Pl.* 3, *figs.* 7*ab*.
1877.	"	Fauna egerer tertiärb., 22–23. *Pl.* 3, *figs.* 7*ab*.

4661. Melolonthites aciculatus. (Scarabæidæ.)

Locality: Oeningen, Baden. Horizon: Tortonian.

1847.	Heer.	Insektenf. tertiärg. Oeningen, i: 71 (aciculata). *Pl.* 2, *fig.* 13.
1852.	Giebel.	Deutschl. petref., 652.
1856.	"	Insect. d. vorwelt, 33.

4662. Melolonthites deperditus. (Scarabæidæ.)

Locality: Oeningen, Baden. Horizon: Tortonian.

1847.	Heer.	Insektenf. tertiärg. Oeningen, i: 71–72 (deperdita). *Pl.* 2, *fig.* 14.
1852.	Giebel.	Deutschl. petref., 652.
1856.	"	Insect. d. vorwelt, 33.

4663. Melolonthites kollari. (Scarabæidæ.)

Localities: Parschlug, Styria. Horizon: Tortonian.

1847.	Heer.	Insektenf. tertiärg. Oeningen, i: 72–73. *Pl.* 7, *fig.* 32.
1852.	Giebel.	Deutschl. petref., 652.
1856.	"	Insect. d. vorwelt, 33–34.

4664. Melolonthites lavateri. (Scarabæidæ.)

Locality: Oeningen, Baden. Horizon: Tortonian.

1847.	Heer.	Insektenf. tertiärg. Oeningen, i: 73–74. *Pl.* 7, *fig.* 30.
1852.	Giebel.	Deutschl. petref., 652.
1856.	"	Insect. d. vorwelt, 34.

4665. Melolonthites obsoletus. (Scarabæidæ.)

Locality: Oeningen, Baden. Horizon: Tortonian.

1847.	Heer.	Insektenf. tertiärg. Oeningen, i: 73 (obsoleta). *Pl.* 2, *fig.* 15.
1852.	Giebel.	Deutschl. petref., 652.
1856.	"	Insect. d. vorwelt, 34.

Melolonthites parschlugana. See Melolonthites parschlugianus.

4666. Melolonthites parschlugianus. (Scarabæidæ.)

Localities: Parschlug, Styria; Szántó, Hungary. Horizon: Tortonian.

1847.	Heer.	Insektenf. tertiärg. Oeningen, i: 72 (parschlugiana). *Pl.* 7, *fig.* 31.
1852.	Giebel.	Deutschl. petref., 652.
1856.	"	Insect. d. vorwelt, 33 (parschlugana).
1870.	Unger.	Denkschr. akad. wiss. Wien, math. nat. cl., xxx, i: 3–4. *Pl.* 1, *figs.* 13, 13*, 14, 14*.

4667. Mengea tertiaria. (Stylopidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1886.	Grote.	Can. entom., xviii: 100.

See also Triæna tertiaria.

4668. Meristos hunteri. (Curculionidæ.)

Locality: Nágpur, Central India. Horizon: ———.

1860.	Murray.	Quart. journ. geol. soc. Lond., xvi: 184. *Pl.* 10, *fig.* 67.
1879.	Medl.-Blanf.	Geol. India, i: 314.

4669. Mesosa jasonis. (Cerambycidæ.)

Locality: Oeningen, Baden. Horizon: Tortonian.

1847.	Heer.	Insektenf. tertiärg. Oeningen, i: 165–166. *Pl.* 5, *fig.* 12.
1852.	Giebel.	Deutschl. petref., 649.
1856.	"	Insect. d. vorwelt, 129–130.
1865.	Heer.	Urwelt der Schweiz, 376.
1872.	"	Monde prim. Suisse, 461.
1876.	"	Prim. world Switz., ii: 31.
1879.	"	Urwelt der Schweiz, 2^{e} aufl., 401.

4670. Mesosites macrophthalmus. (Cerambycidæ.)

Locality: Kutschlin, Bohemia. Horizon: Miocene.

1881.	Diechmüller.	Foss. ins. diatomeensch. Kutschlin, 27–29. *Pl.* 21, *fig.* 12.
1881.	"	Verhandl. leop.-carol. akad. naturf., xlii: 319–321.
1885.	Scudder.	Zittel, Handb. palaeont., i, th. ii: 793. *Fig.* 1022.
1886.	"	Zittel-Barrois, Traité de paléont., ii: 793. *Fig.* 1040.

4671. Microrhagus ———. (Elateridæ.)

Locality: Prussian amber. Horizon: Ligurian.

1845.	Berendt.	Bernst. befindl. organ. reste vorw., i: 56.

4672. Microzoum veteratum. (Cioidæ.)

Locality: Rott, Rhenish Prussia. Horizon: Aquitanian.

1866.	Heyd.-Heyd.	Palaeontogr., xv: 145. *Pl.* 22, *fig.* 28.
1866.	"	Käfer u. polypen, 15. *Pl.* 1, *fig.* 28.
1885.	Scudder.	Zittel, Handb. palaeont., i, th. ii: 795. *Fig.* 1029.
1886.	"	Zittel-Barrois, Traité de paléont., ii: 796. *Fig.* 1047.

4673. Molops ———. (Carabidæ.)

Locality: Brunstatt, Alsatia. Horizon: Middle Oligocene.

1888.	Foerster.	Mitth. comm. geol. Elsass-Lothr., i: 165.
1889.	"	Mitth. comm. geol. Elsass-Lothr., ii: 103.

4674. Molorchus ———. (Cerambycidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1845.	Berendt.	Bernst. befindl. organ. reste vorw., i: 56.

4675. Molorchus antiquus. (Cerambycidæ.)

Compared with M. abbreviatus.

Locality: Vicinity Bonn, Rhenish Prussia. Horizon: Aquitanian?

1837.	Germar.	Fauna insect. Europæ, xix: 14. *Pl.* 14.
1839.	Brullé.	Gisem. ins. foss., 20.
1852.	Giebel.	Deutschl. petref., 650.
1856.	"	Insect. d. vorwelt, 128.

See also Hesthesis antiqua.

4676. Molytes hassencampi. (Otiorhynchidæ.)

Locality: Sieblos, Rhenish Prussia. Horizon: Aquitanian.
1858. Heyden. Palaeontogr., v: 116–117. *Pl.* 23, *fig.* 14.

4677. Mononychus pseudacori (recent). (Curculionidæ.)

Locality: Jarville, France. Horizon: Pleistocene.
[1792. Fabricius. Ent. syst., i, 2: 408.]
1875. Fliche. Comptes rendus, lxxx: 1234.
See also Mononychus punctum-album.

4678. Mononychus punctum-album (recent). (Curculionidæ.)

Locality: Jarville, France. Horizon: Pleistocene.
[1784. Herbst. Füssl. arch., 1784: 74. Pl. 24, fig. 17.]
1885. Scudder. Zittel, Handb. palaeont., i, th. ii: 788.
1886. " Zittel-Barrois, Traité de paléont, ii: 788.
1886. " Bull. U. S. geol. surv. No. 31: 67.
See also Mononychus pseudacori.

4679. Mordella ———. (Mordellidæ.)

Locality: Prussian amber. Horizon: Ligurian
1845. Berendt. Bernst. befindl. organ. reste vorw., i: 56.

4680. Mordella inclusa. (Mordellidæ.)

Locality: Prussian amber. Horizon: Ligurian.
1832. Burmeister. Handb. entom., i: 635.
1836. " Man. ent., 577.
1856. Giebel. Insect. d. vorwelt, 112.
1888. Schlechtend. Zeitschr. ges. naturw., lxi: 479–483.
See also Mordellina inclusa, Ptomaphagus germari.

4681. Mordellina inclusa. (Mordellidæ.)

Compared with Mordella aculeata.

Locality: Prussian amber. Horizon: Ligurian.
1813. Germar. Germar, Mag. entom., i: 14–15.
1885. Scudder. Zittel, Handb. palaeont., i, th. ii: 790.
1886. " Zittel-Barrois, Traité de paléont., ii: 791
1886. " Bull. U. S. geol. surv., No. 31: 70.
1888. Schlechtend. Zeitschr. ges. naturw., lxi: 478–479.
See also Mordella inclusa, Ptomaphagus germari.

4682. Mycetocharoides baumeisteri. (Cistelidæ.)

Locality: Prussian amber. Horizon: Ligurian.
1888. Schaufuss. Berl. ent. zeitschr., xxxii: 269–270.

4683. Mycetoporus ———. (Staphylinidæ.)

Locality: Prussian amber. Horizon: Ligurian.
1845. Berendt. Bernst. befindl. organ. reste vorw., i: 56.

4684. Mycotretus binotatus. (Erotylidæ.)

Compared with M. sanguinipennis Lac.

Locality: Green River, Wyo. Horizon: Oligocene.

1878.	Scudder.	Bull. U. S. geol. surv. terr., iv: 763–764 (binotata).
1885.	"	Zittel, Handb. palaeont., i, th. ii: 800. *Fig.* 1053.
1886.	"	Zittel-Barrois, Traité de paléont., ii: 800. *Fig.* 1070.
1890.	"	Tert. ins. N. A., 502–503. *Pl.* 7, *fig.* 30.

4685. Mycterus molassicus. (Melandryidæ.)

Locality: Oeningen, Baden. Horizon: Tortonian.

1847.	Heer.	Insektenf. tertiärg. Oeningen, i: 163. *Pl.* 5, *fig.* 10.
1852.	Giebel.	Deutschl. petref., 650.
1856.	"	Insect. d. vorwelt, 134.

4686. Mylabris deflorata. (Meloidæ.)

Locality: Rott, Rhenish Prussia. Horizon: Aquitanian.

1866.	Heyd.-Heyd.	Palaeontogr., xv: 146. *Pl.* 23, *fig.* 5.
1866.	"	Käfer u. polypen, 16. *Pl.* 2, *fig.* 5.

4687. Myodites meyeri. (Rhipiphoridæ.)

Locality: Rott, Rhenish Prussia. Horizon: Aquitanian.

1866.	Heyd.-Heyd.	Palaeontogr., xv: 146. *Pl.* 22, *fig.* 29.
1866.	"	Käfer u. polypen, 16. *Pl.* 1, *fig.* 29.

4688. Myrmedonia ——. (Staphylinidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1856.	Menge.	Progr. petrischule Danzig, 1856: 23.

4689. Nanophyes japetus. (Curculionidæ.)

Locality: Rott, Rhenish Prussia. Horizon: Aquitanian.

1866.	Heyd.-Heyd.	Palaeontogr., xv: 153. *Pl.* 24, *fig.* 8.
1866.	"	Käfer u. polypen, 23. *Pl.* 3, *fig.* 8.

4690. Naupactus ——. (Otiorhynchidæ.)

Compared with N. lusitanicus.

Locality: Aix, France. Horizon: Ligurian.

1829.	Serres.	Géogn. terrains tert., 224.

4691. Naupactus crassirostris. (Otiorhynchidæ.)

Locality: Oeningen, Baden. Horizon: Tortonian.

1865.	Heer.	Urwelt der Schweiz, 375. *Fig.* 245 on *p.* 371.
1872.	"	Monde prim. Suisse, 460. *Fig.* 245 on *p.* 455.
1876.	"	Prim. world Switz., ii: 30. *Fig.* 245 on *p.* 27.
1879.	"	Urwelt der Schweiz, 2^e^ aufl., 400. *Fig.* 287 on *p.* 397.

4692. Nebria ——. (Carabidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1845.	Berendt.	Bernst. befindl. organ. reste vorw., i: 56.

4693. Nebria paleomelas. (Carabidæ.)

Compared with N. sahlbergi Fisch.

Locality: Nicola River, British Columbia. **Horizon:** ——.

1879. **Scudder.** Rep. progr. geol. surv. Can., 1877-'78: B 179.
1879. " Insect. tert. Nicola, 4.
1890. " Tert. ins. N. A., 532. *Pl.* 2, *fig.* 20.

4694. Nebria pluto. (Carabidæ.)

Locality: Oeningen, Baden. **Horizon:** Tortonian.

1862. **Heer.** Verhandl. holl. maatsch. wetensch. Haarl., xvi: 18-19. *Pl.* 1, *figs.* 1, 2.

4695. Nebria tisiphone. (Carabidæ.)

Locality: Aix, France. **Horizon:** Ligurian.

1874. **Oustalet.** Ann. sc. géol., v, art. 2: 78-80. *Pl.* 1, *fig.* 1.

4696. Necticus minutus. (Dytiscidæ.)

Locality: LePuy, France. **Horizon:** ——.

1854. **Aymard.** Congr. scient. France, sess. xxii: 42 (undescr.).

4697. Necticus palustris. (Dytiscidæ.)

Locality: LePuy, France. **Horizon:** ——.

1854. **Aymard.** Congr. scient. France, sess. xxii: 42 (undescr.).

4698. Necydalis ? ——. (Cerambycidæ.)

Locality: Prussian amber. **Horizon:** Ligurian.

1845. **Berendt.** Bernst. befindl. organ. reste vorw., i: 56.

4699. Neothanes testeus. (Carabidæ.)

Locality: Green River, Wyo. **Horizon:** Oligocene.

1890. **Scudder.** Tert. ins. N. A., 535-536. *Pl.* 7, *figs.* 32, 39.
See also Cychrus testeus.

4700. Nitidula ——. (Nitidulidæ.)

Locality: Prussian amber. **Horizon:** Ligurian.

1845. **Berendt.** Bernst. befindl. organ. reste vorw., i: 56.

4701. Nitidula æmula. (Nitidulidæ.)

Locality: Oeningen, Baden. **Horizon:** Tortonian.

1862. **Heer.** Verhandl. holl. maatsch. wetensch. Haarl., xvi: 52. *Pl.* 3, *fig.* 29

4702. Nitidula ancora. (Nitidulidæ.)

Locality: Oeningen, Baden. **Horizon:** Tortonian.

1862. **Heer.** Verhandl. holl. maatsch. wetensch. Haarl., xvi: 51. *Pl.* 3, *fig.* 30.

4703. Nitidula maculigera. (Nitidulidæ.)

Locality: Oeningen, Baden. **Horizon:** Tortonian.

1862. **Heer.** Verhandl. holl. maatsch. wetensch. Haarl., xvi: 52. *Pl.* 3, *fig.* 27.
1885. **Scudder.** Zittel, Handb. palaeont., i, th. ii: 799. *Fig.* 1045.
1886. " Zittel-Barrois, Traité de paléont., ii: 799. *Fig.* 1062.

4704. Nitidula melanaria. (Nitidulidæ.)

Locality: Oeningen, Baden. **Horizon:** Tortonian.

1847. Heer. Insektenf. tertiärg. Oeningen, i: 36–37. *Pl.* 7, *fig.* 21.
1852. Giebel. Deutschl. petref., 654.
1856. " Insect. d. vorwelt, 43.

4705. Nitidula pallida. (Nitidulidæ.)

Locality: Oeningen, Baden. **Horizon:** Tortonian.

1862. Heer. Verhandl. holl. maatsch. wetensch. Haarl., xvi: 52–53. *Pl.* 3, *fig.* 28.

4706. Nitidula radobojana. (Nitidulidæ.)

Locality: Radoboj, Croatia. **Horizon:** Mayencian.

1847. Heer. Insektenf. tertiärg. Oeningen, i: 37–38. *Pl.* 2, *fig.* 8.
1852. Giebel. Deutschl. petref., 654.
1856. " Insect. d. vorwelt, 43.

4707. Nosodendron tritavum. (Byrrhidæ.)

Compared with N. unicolor.

Locality: Green River, Wyo. **Horizon:** Oligocene.

1890. Scudder. Tert. ins. N. A., 499. *Pl.* 7, *fig.* 36.

4708. Notaris? ——. (Curculionidæ.)

Locality: Aix, France. **Horizon:** Ligurian.

1829. Curtis. Edinb. new. phil. journ., vii: 295.
1829. " Murchison-Lyell, Tert. form. Aix, 11.

4709. Notiophilus aquaticus (recent). **(Carabidæ.)**

Locality: Ostend, Norfolk, England. **Horizon:** Pleistocene.

[1746. Linné. Faun. suec., 752.]
1888. Bell. Entom., xxi: 2 (vel palustris).

4710. Notiophilus palustris (recent). **(Carabidæ.)**

Locality: England. **Horizon:** Pleistocene.

[1812. Duftschmid. Faun. austr., ii: 192.]
See also Notiophilus aquaticus.

4711. Oberea præmortua. (Cerambycidæ.)

Locality: Rott, Rhenish Prussia. **Horizon:** Aquitanian.

1862. Heyden. Palaeontogr., x: 72. *Pl.* 10, *fig.* 23.

4712. Obrium ——. (Cerambycidæ.)

Compared with O. testaceum.

Locality: Prussian amber. **Horizon:** Ligurian.

1832. Burmeister. Handb. ent., i: 635.
1836. " Man. ent., 577.

4713. Obrium ——. (Cerambycidæ.)

Locality: ——. **Horizon:** ——.

1846. Giebel. Paläozool., 283.

4714. Ochthebius plutonis. (Hydrophilidæ.)

Locality: Rott, Rhenish Prussia. Horizon: Aquitanian.

1866. Heyd.-Heyd. Palaeontogr., xv: 136. *Pl.* 22, *figs.* 8, 9.
1866. " Käfer u. polypen, 6. *Pl.* 1, *figs.* 8, 9.

Ocypus atavus. See Staphylinus (Ocypus) atavus.

Ocypus germarii. See Staphylinus (Ocypus) germarii.

Ocypus provincialis. See Staphylinus (Ocypus) provincialis.

Odontocheila ———. See Cicindela (Odontocheila) ———

Odontoda ———. See Odontota ———

4715. Odontota ———. (Chrysomelidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1856. Menge. Progr. petrischule Danzig, 1856: 21 (Odontoda).

4716. Œdemera ———. (Œdemeridæ.)

Locality: Prussian amber. Horizon: Ligurian.

1845. Berendt. Bernst. befindl. organ. reste vorw., i: 56.

4717.. Olibrus ———. (Phalacridæ.)

Locality: Brunstatt, Alsatia. Horizon: Middle Oligocene.

1890. Foerster. In litt.

Omalium ———. See Homalium ———.

Omalium protogeæ. See Homalium protogeæ.

4718. Omaseus nigritus (recent). (Carabidæ.)

Locality: Dürnten, Switzerland. Horizon: Interglacial.

1886. Scudder. Bull. U. S. geol. surv., No. 31: 64 (nigrita).
See also Pterostichus nigritus.

4719. Oniticellus amplicollis. (Scarabæidæ.)

Compared with O. flavipes F., Europe.

Locality: Oeningen, Baden. Horizon: Tortonian.

1862. Heer. Verhandl. holl. maatsch. wetensch. Haarl., xvi: 76, 77. *Pl.* 6, *fig.* 11.
1865. " Urwelt der Schweiz, 379. *Fig.* 269 on *p.* 378
1872. " Monde prim. Suisse, 465. *Fig.* 269 on *p.* 463.
1876. " Prim. world Switz., ii: 36. *Fig.* 269 on *p.* 34.
1879. " Urwelt der Schweiz, 2e aufl., 405. *Fig.* 311 on *p.* 404.

4720. Onitis magus. (Scarabæidæ.)

Locality: Rott, Rhenish Prussia. Horizon: Aquitanian.

1862. Heyden. Palaeontogr., x: 65. *Pl.* 10, *fig.* 13,

4721. Onthophagus bisontinus. (Scarabæidæ.)

Compared with O. affinis St.

Locality: Oeningen, Baden. Horizon: Tortonian.

1862. Heer. Verhandl. holl. maatsch. wetensch. Haarl., xvi: 76. *Pl.* 6, *fig.* 7.
1865. " Urwelt der Schweiz, 379.
1872. " Monde prim. Suisse, 465.
1876. " Prim. world Switz., ii: 36.
1879. " Urwelt der Schweiz, 2^e aufl., 405.

4722. Onthophagus crassus. (Scarabæidæ.)

Compared with O. vacca.

Locality: Oeningen, Baden. Horizon: Tortonian.

1862. Heer. Verhandl. holl. maatsch. wetensch. Haarl., xvi: 75. *Pl.* 6, *fig.* 5.
1865. " Urwelt der Schweiz, 379.
1872. " Monde prim. Suisse, 465.
1876. " Prim. world Switz., ii: 36.
1879. " Urwelt der Schweiz, 2^e aufl., 405.

4723. Onthophagus luteus. (Scarabæidæ.)

Locality: Aix, France. Horizon: Ligurian.

1874. Oustalet. Ann. sc. géol., v, art. 2: 194–196. *Pl.* 2, *fig.* 17.

4724. Onthophagus ovaculus. (Scarabæidæ.)

Compared with O. ovatus L.

Locality: Oeningen, Baden. Horizon: Tortonian.

1847. Heer. Insektenf. tertiärg. Oeningen, i: 64. *Pl.* 7, *fig.* 26.
1852. Giebel. Deutschl. petref., 653.
1856. " Insect. d. vorwelt, 39.
1865. Heer. Urwelt der Schweiz, 379.
1872. " Monde prim. Suisse, 465.
1876. " Prim. world Switz., ii: 36.
1879. " Urwelt der Schweiz, 2^e aufl., 405.

4725. Onthophagus prodromus. (Scarabæidæ.)

Compared with O. vacca.

Locality: Oeningen, Baden. Horizon: Tortonian.

1862. Heer. Verhandl. holl. maatsch. wetensch. Haarl., xvi: 75–76. *Pl.* 6, *fig.* 6.
1865. " Urwelt der Schweiz, 379. *Fig.* 268 on *p.* 378.
1872. " Monde prim. Suisse, 465. *Fig.* 268 on *p.* 463.
1876. " Prim. world Switz., ii: 36. *Fig.* 268 on *p.* 34.
1879. " Urwelt der Schweiz, 2^e aufl., 405. *Fig.* 310 on *p.* 404.
1885. Scudder. Zittel, Handb. palaeont., i, th. ii: 795. *Fig.* 1027.
1886. " Zittel-Barrois, Traité de paléont., ii: 795. *Fig.* 1045.

4726. Onthophagus urus. (Scarabæidæ.)

Compared with O. nuchicornis L.

Locality: Oeningen, Baden. Horizon: Tortonian.

1847. Heer. Insektenf. tertiärg. Oeningen, i: 62–64. *Pl.* 2, *figs.* 10, 10*b*.
1852. Giebel. Deutschl. petref., 653.
1856. " Insect. d. vorwelt, 39.

1862. Heer. Verhandl. holl. maatsch. wetensch., xvi: 76.
1865. " Urwelt der Schweiz, 379.
1872. " Monde prim. Suisse, 465.
1876. " Prim. world Switz., ii: 36.
1879. " Urwelt der Schweiz, 2^e aufl., 405.

Opatrum ———. See Hopatrum ———.

Ophonus ———. See Harpalus ——— Curtis.

Ophonus ———. See Harpalus (Argutor or Ophonus) ———.

4727. Ophryastes compactus. (Otiorhynchidæ.)

Compared with O. cinereus Schönh., Mexico.

Locality: Green River, Wyo. Horizon: Oligocene.

1878. Scudder. Bull. U. S. geol. surv. terr., iv: 765–766.
1890. " Tert. ins. N. A., 477–478. *Pl.* 8, *fig.* 39.

4728. Opilo ———. (Cleridæ.)

Locality: Prussian amber. Horizon: Ligurian.

1845. Berendt. Bernst. befindl. organ. reste vorw., i: 56.

4729. Orchesia (or Hallomenus) ———. (Melandryidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1845. Berendt. Bernst. befindl. organ. reste vorw., i: 56.

4730. Oreina ———. (Chrysomelidæ.)

Locality: Brunstatt, Alsatia. Horizon: Middle Oligocene.

1888. Foerster. Mitth. comm. geol. Elsass-Lothr., i: 165.
1889. " Mitth. comm. geol. Elsass-Lothr., ii: 102.

4731. Oreina ? ———. (Chrysomelidæ.)

Locality: Lexden, England. Horizon: Peat.

1863. Wollaston. Quart. journ. geol. soc. Lond., xix, i: 400–401, No. 2.

4732. Oreina amphyctionis. (Chrysomelidæ.)

Locality: Oeningen, Baden. Horizon: Tortonian.

1847. Heer. Insektenf. tertiärg. Oeningen, i: 212. *Pl.* 7, *fig.* 12.
1852. Giebel. Deutschl. petref., 648.
1856. " Insect. d. vorwelt, 119.

4733. Oreina hellenis. (Chrysomelidæ.)

Locality: Oeningen, Baden. Horizon: Tortonian.

1847. Heer. Insektenf. tertiärg. Oeningen, i: 209–211. *Pl.* 7, *fig.* 10.
1852. Giebel. Deutschl. petref., 648.
1856. " Insect. d. vorwelt, 118.

4734. Oreina protogeniæ. (Chrysomelidæ.)

Locality: Oeningen, Baden. Horizon: Tortonian.

1847. Heer. Insektenf. tertiärg. Oeningen, i: 211–212. *Pl.* 7, *fig.* 11.
1852. Giebel. Deutschl. petref., 648.
1856. " Insect. d. vorwelt, 118–119.

4735. Oryctoscirtetes protogæum. (Chrysomelidæ.)

Locality: Florissant, Colo. Horizon: Oligocene.

1876. Scudder. Bull. U. S. geol. surv. terr., ii: 82-83.

4736. Otiorhynchus ——. (Otiorhynchidæ.)

Locality: Garvel Park, Clyde, Scotland. Horizon: Pleistocene.

1888. Bell. Entom., xxi: 2.

4737. Otiorhynchus ——. (Otiorhynchidæ.)

Locality: Brunstatt, Alsatia. Horizon: Middle Oligocene.

1889. Foerster. Mitth. comm. geol. Elsass-Lothr., ii: 102.

4738. Otiorhynchus alpicola (recent). (Otiorhynchidæ.)

Locality: Schwerzenbach, Switzerland. Horizon: Glacial clay.

[1843. Boheman. Schönh., Gen. curc., vii, i: 327.]
1879. Heer. Urwelt der Schweiz, 2e aufl., 581. *Pl.* 12, *figs.* 20, 20*b*.

4739. Otiorhynchus dubius. (Otiorhynchidæ.)

Locality: Green River, Wyo. Horizon: Oligocene.

1878. Scudder. Bull. U. S. geol. surv. terr., iv: 766.
See also Otiorhynchus tumbæ.

4740. Otiorhynchus fuscipes (recent). (Otiorhynchidæ.)

Locality: Schwerzenbach, Switzerland. Horizon: Glacial clay.

[1808? Olivier. Ent., v: 372. *Pl.* 31, *fig.* 464.]
1879. Heer. Urwelt der Schweiz, 2e aufl., 581.

Otiorhynchus induratus. See Eurychirus (Otiorhynchus) induratus.

Otiorhynchus montanus. See Otiorhynchus niger-montanus.

4741. Otiorhynchus niger (recent). (Otiorhynchidæ.)

Locality: Hösbach, Bavaria. Horizon: Lower Pleistocene.

[1775. Fabricius. Syst. ent., 150.]
1884. Flach. Käfer unterpleist. Hösbach, 10.
1884. " Verhandl. physik.-med. gesellsch. Würzb., n. f., xviii: 294.
See also Otiorhynchus niger-montanus.

4742. Otiorhynchus niger-montanus (recent). (Otiorhynchidæ.)

Locality: Schwerzenbach, Switzerland. Horizon: Glacial clay.

[1843. Boheman. Schönh., Gen. curc., vii, i: 306.]
1879. Heer. Urwelt der Schweiz, 2e aufl., 581. *Pl.* 12, *figs.* 18, 19, 19*b*.
See also Otiorhynchus niger.

4743. Otiorhynchus perditus. (Otiorhynchidæ.)

Compared with O. sulcatus.

Locality: Green River, Wyo. Horizon: Oligocene.

1876. Scudder. Bull. U. S. geol. surv. terr., ii: 84.
1878. " Bull. U. S. geol. surv. terr., iv: 766.
1890. " Tert. ins. N. A., 476-477. *Pl.* 8, *fig.* 25.

4744. Otiorhynchus rugifrons (recent). (Otiorhynchidæ.)

Locality : Schwerzenbach, Switzerland. Horizon : Glacial clay.

[1813. Gyllenhal. Ins. suec., iii : 319.]
1879. Heer. Urwelt der Schweiz, 2e aufl., 581.

4745. Otiorhynchus tumbæ. (Otiorhynchidæ.)

Locality : Green River, Wyo. Horizon : Oligocene.

1890. Scudder. Tert. ins. N. A., 477. *Pl.* 8, *fig.* 13.
See also Otiorhynchus dubius.

4746. Oxygonus mortuus. (Elateridæ.)

Locality : White River, Utah. Horizon : Oligocene.

1876. Scudder. Bull. U. S. geol. surv. terr., ii : 81.
1877. " Bull. U. S. geol. surv. terr., iii : 759.
1890. " Tert. ins. N. A., 496. *Pl.* 5, *figs.* 110, 111.

4747. Oxyporus blumenbachii. (Staphylinidæ.)

Locality : Prussian amber. Horizon : Ligurian.

1806. Gravenhorst. Monogr. col. micr., 235–236 et index.

4748. Oxyporus seyberti. (Staphylinidæ.)

Locality : Oeningen, Baden. Horizon : Tortonian.

1862. Heer. Verhandl. holl. maatsch. wetensch. Haarl., xvi : 49. *Pl.* 3, *fig.* 6.

4749. Oxyporus stiriacus. (Staphylinidæ.)

Locality : Scarboro', Ontario. Horizon : Postpliocene.

1890. Scudder. Tert. ins. N. A., 505. *Pl.* 1, *fig.* 36.

4750. Oxyporus vulcanus. (Staphylinidæ.)

Locality : Rott, Rhenish Prussia. Horizon : Aquitanian.

1866. Heyd.-Heyd. Palaeontogr., xv : 137–138. *Pl.* 22, *fig.* 14.
1866. " Käfer u. polypen, 7–8. *Pl.* 1, *fig.* 14.

4751. Oxytelus ——— (2 sp.). (Staphylinidæ.)

Locality : Brunstatt, Alsatia. Horizon : Middle Oligocene.

1890. Foerster. In litt.

4752. Oxytelus ? ——— (larva). (Staphylinidæ.)

Locality : Rocky River, Sydney flats, New South Wales. Horizon : ———.

1870. Moore. Quart. journ. geol. soc. Lond., xxvi : 263. *Pl.* 18, *fig.* 10

4753. Oxytelus pristinus. (Staphylinidæ.)

Compared with O. rugosus.

Locality : White River, Colo. Horizon : Oligocene.

1876. Scudder. Bull. U. S. geol. surv. terr., ii : 79.
1877. " Bull. U. S. geol. surv. terr., iii : 759.
1890. " Tert. ins. N. A., 503–504. *Pl.* 5, *figs.* 118–120.

4754. Oxytelus proævus. (Staphylinidæ.)

Locality: Oeningen, Baden. Horizon: Tortonian.

1862. Heer. Verhandl. holl. maatsch. wetensch. Haarl., xvi: 45–46. *Pl.* 3, *fig.* 5.
1865. " Urwelt der Schweiz, 383.
1872. " Monde prim. Suisse, 469.
1876. " Prim. world Switz., ii: 40.
1879. " Urwelt der Schweiz, 2ᵉ aufl., 408.

4755. Pachypus ———. (Scarabæidæ.)

Compared with P. excavatus.

Locality: Aix, France. Horizon: Ligurian.

1829. Serres. Géogn. terrains tert., 222.

4756. Panagæus dryadum. (Carabidæ.)

Locality: Aix, France. Horizon: Ligurian.

1874. Oustalet. Ann. sc. géol., v, art. 2: 94–96. *Pl.* 2, *fig.* 1.

4757. Parandra ———. (Spondylidæ.)

Locality: Rhine, Germany. Horizon: Aquitanian ?.

1831. Goldfuss. Verhandl. leop.-carol. akad. naturf., vii, i: 118.

4758. Parandrita vestita. (Cucujidæ.)

Compared with P. cephalotes LeC.

Locality: Green River, Wyo. Horizon: Oligocene.

1890. Scudder. Tert. ins. N. A., 501–502. *Pl.* 7, *fig.* 41.

4759. Parolamia rudis. (Cerambycidæ.)

Locality: Florissant, Colo. Horizon: Oligocene.

1878. Scudder. Bull. U. S. geol. surv. terr., iv: 530.

4760. Passandra ———. (Cucujidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1856. Menge. Progr. petrischule Danzig, 1856: 21.

4761. Patrobus excavatus (recent). (Carabidæ.)

Localities: Jarville, France: Hösbach, Bavaria. Horizon: Pleistocene.

[1790. Paykull. Monogr. carab., 38.]
1875. Fliche. Comptes rendus, lxxx: 1234.
1884. Flach. Käfer unterpleist. Hösbach, 4–5. *Pl.* 1, *figs.* 5*a*, 5*b*.
1884. " Verhandl. physik.-med. gesellsch. Würzb., n. f., xviii: 288–289. *Pl.* 8, *figs.* 5*a*, 5*b*.
1886. Scudder. Bull. U. S. geol. surv., No. 31: 84.

4762. Patrobus gelatus. (Carabidæ.)

Compared with P. septentrionis Dej.

Locality: Scarboro,' Ontario. Horizon: Postpliocene.

1890. Scudder. Tert. ins. N. A., 530. *Pl.* 1, *fig.* 48.

4763. **Paussoides mengei.** (Paussidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1856. Motschulsky. Étud. entom., v: 26. *Pl.*, *figs*. 6, 6′, 6″, 6‴.
1885. Scudder. Zittel, Handb. palaeont., i, th. ii: 802. *Fig*. 1060.
1886. " Zittel-Barrois, Traité de paléont., ii: 802. *Fig*. 1077.

4764. **Paussus ——.** (Paussidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1856. Menge. Progr. petrischule Danzig, 1856: 21.

4765. **Pelobius cretzschmari.** (Dytiscidæ.)

Locality: Rott, Rhenish Prussia. Horizon: Aquitanian.

1866. Heyd.-Heyd. Palaeontogr., xv: 134–135. *Pl.* 22, *fig*. 2.
1866. " Käfer u. polypen, 4–5. *Pl.* 1, *fig*. 2.

4766. **Peltis costulata.** (Trogositidæ.)

Locality: Rott, Rhenish Prussia. Horizon: Aquitanian.

1862. Heyden. Palaeontogr., x: 65. *Pl.* 10, *fig*. 20.

4767. **Peltis tricostata.** (Trogositidæ.)

Locality: Oeningen, Baden. Horizon: Tortonian.

1847. Heer. Insektenf. tertiärg. Oeningen, i: 39–40. *Pl.* 7, *fig*. 34
1852. Giebel. Deutschl. petref., 654.
1856. " Insect. d. vorwelt, 42.

See also Silpha tricostata.

4768. **Pentodon bellerophon.** (Scarabæidæ.)

Locality: Rott, Rhenish Prussia. Horizon: Aquitanian.

1866. Heyd.-Heyd. Palaeontogr., xv: 141–142. *Pl.* 23, *fig* 1.
1866. " Käfer u. polypen, 11–12. *Pl.* 2, *fig*. 1.

4769. **Pentodon proserpinæ.** (Scarabæidæ.)

Locality: Oeningen, Baden. Horizon: Tortonian.

1865. Heer. Urwelt der Schweiz, 379.
1872. " Monde prim. Suisse, 465.
1876. " Prim. world Switz., ii: 36.
1879. " Urwelt der Schweiz, 2e aufl., 405.

4770. **Perotis bruckmanni.** (Buprestidæ.)

Locality: Oeningen, Baden. Horizon: Tortonian.

1862. Heer. Verhandl. holl. maatsch. wetensch. Haarl., xvi: 85. *Pl.* 7, *fig*. 1

4771. **Perotis hausmanni.** (Buprestidæ.)

Locality: Rott, Rhenish Prussia. Horizon: Aquitanian.

1862. Heyden. Palaeontogr., x: 66–67. *Pl.* 10, *fig*. 6.

4772. **Perotis lævigata.** (Buprestidæ.)

Localities: "Oeningen," Baden; Monte Bolca, Italy. Horizon: Ligurian.

1855. Heer. MSS.
1855. Massalongo. Nereid. foss., 32.
1856. " Stud. paleont., 14–15. *Pl.* 1, *fig*. 4
1886. Omboni. Atti r. ist. ven., (6), iv: 1425 (lœvigata). *Pl.* 2, *fig*. 4.
1886. " Foss. ins. Ven., 5. *Pl.* 2, *fig*. 4.

4773. Perotis lavateri. (Buprestidæ.)

Locality: Oeningen, Baden. Horizon: Tortonian.

1847.	Heer.	Insektenf. tertiärg. Oeningen, i: 105–106. *Pl.* 3, *fig.* 4.
1852.	Giebel.	Deutschl. petref., 652.
1856.	"	Insect. d. vorwelt, 82.

Perotis lœvigata. See Perotis lævigata.

4774. Perotis redita. (Buprestidæ.)

Locality: Rott, Rhenish Prussia. Horizon: Aquitanian.

1862.	Heyden.	Palaeontogr., x: 67. *Pl.* 10, *fig.* 37.

4775. Phalacrus ———. (Phalacridæ.)

Locality: Prussian amber. Horizon: Ligurian.

1845.	Berendt.	Bernst. befindl. organ. reste vorw., i: 56.

4776. Phanæus antiquus. (Scarabæidæ.)

Compared with P. pluto, United States.

Locality: Port Kennedy, Pa. Horizon: Postpliocene.

1876.	Horn.	Trans. Amer. ent. soc., v: 245.
1890.	Scudder.	Tert. ins. N. A., 489–490. *Pl.* 1, *figs.* 12–14.

4777. Phenolia incapax. (Nitidulidæ.)

Compared with P. grossa.

Locality: Green River, Wyo. Horizon: Oligocene.

1876.	Scudder.	Bull. U. S. geol. surv. terr., ii: 80.
1878.	"	Bull. U. S. geol. surv. terr., iv: 762.
1890.	"	Tert. ins. N. A., 499. *Pl.* 7, *fig.* 23.

4778. Philhydrus ——— (2 sp.). (Hydrophilidæ.)

Locality: Green River, Wyo. Horizon: Oligocene.

1878.	Scudder.	Bull. U. S. geol. surv. terr., iv: 761.
1890.	"	Tert. ins. N. A., 512.

4779. Philhydrus? morticinus. (Hydrophilidæ.)

Locality: Rott, Rhenish Prussia. Horizon: Aquitanian.

1866.	Heyd.-Heyd.	Palaeontogr., xv: 136. *Pl.* 22, *figs.* 6, 7.
1866.	"	Käfer u. polypen, 6. *Pl.* 1, *figs.* 6, 7.
1885.	Scudder.	Zittel, Handb. palaeont., i, th. ii: 802. *Fig.* 1064.
1886.	"	Zittel-Barrois, Traité de paléont., ii: 803. *Fig.* 1081.

4780. Philhydrus primævus. (Hydrophilidæ.)

Locality: Green River, Wyo. Horizon: Oligocene.

1876.	Scudder.	Bull. U. S. geol. surv. terr., ii: 78.
1878.	"	Bull. U. S. geol. surv. terr., iv: 761.
1890.	"	Tert. ins. N. A., 512. *Pl.* 8, *fig.* 5.

4781. Philonthus ———. (Staphylinidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1845.	Berendt.	Bernst. befindl. organ. reste vorw., i: 56.

4782. Philonthus ——. (Staphylinidæ.)

Locality: Hösbach, Bavaria. Horizon: Lower Pleistocene.

1884. Flach. Käfer unterpleist. Hösbach, 9.
1884. " Verhandl. physik.-med. gesellsch. Würzb., n. f., xviii: 293.

4783. Philonthus ——. (Staphylinidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1856. Menge. Progr. petrischule Danzig, 1856: 23.

4784. Philonthus bituminosus. (Staphylinidæ.)

Locality: Rott, Rhenish Prussia. Horizon: Aquitanian.

1866. Heyd.-Heyd. Palaeontogr., xv: 137. *Pl.* 22, *fig.* 11.
1866. " Käfer u. polypen, 7. *Pl.* 1, *fig.* 11.

4785. Philonthus bojeri. (Staphylinidæ.)

Locality: Aix, France. Horizon: Ligurian.

1856. Heer. Viert. naturf. gesellsch. Zürich, i: 17. *Pl.* 1, *fig.* 4.
1874. Oustalet. Ann. sc. géol., v, art. 2: 169–170. *Pl.* 3, *fig.* 6.

4786. Philonthus marcelli. (Staphylinidæ.)

Locality: Aix, France. Horizon: Ligurian.

1856. Heer. Viert. naturf. gesellsch. Zürich, i: 17–18. *Pl.* 1, *fig.* 5.
1874. Oustalet. Ann. sc. géol., v, art. 2: 170–171. *Pl.* 5, *fig.* 15.

Phosphuga atrata. See Silpha (Phosphuga) atrata.

4787. Phyllobius ——. (Otiorhynchidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1832. Burmeister. Handb. ent., i: 635.
1836. " Man. ent., 577.

4788. Phymaphoroides antennatus. (Endomychidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1856. Motschulsky. Étud. entom., v: 27 (Phymophoroides). *Pl.*, *figs.* 7, 7′, 7″.
1885. Scudder. Zittel, Handb. palaeont., i, th. ii: 800. *Fig.* 1054.
1886. " Zittel-Barrois, Traité de paléont., ii: 800. *Fig.* 1071.

Phymophoroides antennatus. See Phymaphoroides antennatus.

4789. Phytonomus ——. (Curculionidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1845. Berendt. Bernst. befindl. organ. reste vorw., i: 56.

4790. Phytonomus annosus. (Curculionidæ.)

Locality: Aix, France. Horizon: Ligurian.

1874. Heer. MSS.
1874. Oustalet. Ann. sc. géol., v, art. 2: 283–285. *Pl.* 3, *fig.* 9.

See also Brachycerus exilis.

4791. Phytonomus firmus. (Curculionidæ.)

Locality: Aix, France. Horizon: Ligurian.

1856. Heer. Viert. naturf. gesellsch. Zürich, i: 23. *Pl.* 1, *fig.* 14.
1874. Oustalet. Ann. sc. géol., v, art. 2: 282–283. *Pl.* 6, *fig.* 7.

4792. Pinitoides scydmæniformis.

Locality: Prussian amber. Horizon: Ligurian.

1856. Motschulsky. Étud. entom., v: 27. *Pl.*, *figs.* 2, 2′, 2″.

4793. Pissodes ———. (Curculionidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1845. Berendt. Bernst. befindl. organ. reste vorw., i: 56.

4794. Pissodes ———. (Curculionidæ.)

Locality: Brunstatt, Alsatia. Horizon: Middle Oligocene.

1890. Foerster. In litt.

4795. Pissodes effossus. (Curculionidæ.)

Locality: Sieblos, Rhenish Prussia. Horizon: Aquitanian.

1858. Heyden. Palaeontogr., v: 117. *Pl.* 23, *fig.* 15.

4796. Plagiodera novata. (Chrysomelidæ.)

Compared with P. armoraciæ Linn.

Locality: Rott, Rhenish Prussia. Horizon: Aquitanian.

1866. Heyd.-Heyd. Palaeontogr., xv: 155. *Pl.* 24, *fig.* 14.
1866. " Käfer u. polypen, 25. *Pl.* 3, *fig.* 14.

4797. Platycerus ———. (Lucanidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1845. Berendt. Bernst. befindl. organ. reste vorw., i: 56.

4798. Platycerus sepultus. (Lucanidæ.)

Compared with P. tenebrioides.

Locality: Vicinity Bonn, Rhenish Prussia. Horizon: Aquitanian?

1837. Germar. Fauna insect. Europæ, xix: 7. *Pl.* 7.
1852. Giebel. Deutschl. petref., 653.
1856. " Insect. d. vorwelt, 29.

4799. Platydema geinitzi. (Tenebrionidæ.)

Locality: Rott, Rhenish Prussia. Horizon: Aquitanian.

1866. Heyd.-Heyd. Palaeontogr., xv: 145–146. *Pl.* 22, *fig.* 22.
1866. " Käfer u. polypen, 15–16. *Pl.* 1, *fig.* 22.

4800. Platynus cæsus. (Carabidæ.)

Locality: Green River, Wyo. Horizon: Oligocene.

1890. Scudder. Tert. ins. N. A., 522–523. *Pl.* 7, *fig.* 34.

4801. Platynus casus. (Carabidæ.)

Compared with P. rubripes Zimm.

Locality: Scarboro’, Ontario. Horizon: Pleistocene.

1890. Scudder. Tert. ins. N. A., 519–520. *Pl.* 1, *fig.* 42.

4802. Platynus desuetus. (Carabidæ.)

Compared with P. crenistriatus LeC.

Locality: Scarboro', Ontario. Horizon: Pleistocene.

1890. Scudder. Tert. ins. N. A., 521–522. *Pl.* 1, *figs.* 43, 51, 58.

4803. Platynus dissipatus. (Carabidæ.)

Locality: Scarboro', Ontario. Horizon: Pleistocene.

1890. Scudder. Tert. ins. N. A., 521. *Pl.* 1, *fig.* 37.

4804. Platynus gracilis (recent). (Carabidæ.)

Locality: Jarville, France. Horizon: Pleistocene.

[1827. Gyllenhal. Ins. suec., iv: 449.]
1886. Scudder. Bull. U. S. geol. surv., No. 31: 84.

4805. Platynus halli. (Carabidæ.)

Compared with P. crenistriatus LeC.

Locality: Scarboro', Ontario. Horizon: Pleistocene.

1890. Scudder. Tert. ins. N. A., 520–521. *Pl.* 1, *fig.* 41.

4806. Platynus harttii. (Carabidæ.)

Locality: Scarboro', Ontario. Horizon: Pleistocene.

1890. Scudder. Tert. ins. N. A., 522. *Pl.* 1, *fig.* 31.

4807. Platynus hindei. (Carabidæ.)

Compared with P. rubripes Zimm.

Locality: Scarboro', Ontario. Horizon: Pleistocene.

1890. Scudder. Tert. ins. N. A., 520. *Pl.* 1, *fig.* 54.

4808. Platynus senex. (Carabidæ.)

Compared with P. variolatus LeC., North America.

Locality: Green River, Wyo. Horizon: Oligocene.

1878. Scudder. Bull. U. S. geol. surv. terr., iv: 759.
1890. " Tert. ins. N. A., 519. *Pl.* 7, *fig.* 38.

4809. Platypus ———. (Scolytidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1832. Burmeister. Handb. ent., i: 635.
1836. " Man. ent., 577.
See also Platypus cylindricus.

4810. Platypus ———. (Scolytidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1825. Guérin. Dict. class. d'hist. nat., viii: 580 (Platype).
1829. Serres. Géogn. terrains tert., 241.
1845. Motschulsky. Bull. soc. imp. nat. Mosc., xviii, ii: 100.

4811. Platypus cylindricus. (Scolytidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1831. Burmeister. Oken, Isis, 1831: 1100.
See also Platypus ——— Burmeister.

4812. Platypus maravignæ. (Scolytidæ.)

Locality: Sicilian amber. Horizon: ——.

1838. Guérin. Rev. zool., 1838: 170. *Pl.* 1, *fig.* 7.

Platysma oblongopunctata. See Feronia (Platysma) oblongopunctata.

4813. Plinthus heeri. (Curculionidæ.)

Locality: Aix, France. Horizon: Ligurian.

1874. Oustalet. Ann. sc. géol., v, art. 2: 279–281. *Pl.* 4, *fig.* 12.

4814. Plinthus redivivus. (Curculionidæ.)

Locality: Corent, France. Horizon: Aquitanian

1870. Oustalet. Ann. sc. géol., ii, art. 3: 74. *Pl.* 1, *fig.* 10.

Pœcilus ——. See Feronia (Pœcilus) ——.

4815. Polydrosus ——. (Otiorhynchidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1832. Burmeister. Handb. ent., i: 635 (Polydrusus).
1836. " Man. ent., 577.

Polydrusus ——. See Polydrosus ——.

4816. Polystichus ——. (Carabidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1845. Berendt. Bernst. befindl. organ. reste vorw., i: 56.

4817. Polystichus hopei. (Carabidæ.)

Locality: Aix, France. Horizon: Ligurian.

1874. Oustalet. Ann. sc. géol., v, art. 2: 119–120. *Pl.* 1, *fig.* 8.

4818. Prasocuris aucta var. egena (recent). (Chrysomelidæ.)

Locality: Hösbach, Bavaria. Horizon: Lower Pleistocene.

[1827. Gyllenhall. Ins. suec., iv: 549.]
1884. Flach. Käfer unterpleist. Hösbach, 10–11. *Pl.* 2, *fig.* 11.
1884. " Verhandl. physik.-med. gesellsch. Würzb., n. f., xviii: 294–295. *Pl.* 9, *fig.* 11.

Prasocuris egena. See Prasocuris aucta var. egena.

4819. Prionus ? —— (borings). (Cerambycidæ.)

Locality: Salzhausen, Germany. Horizon: Miocene

1856. Heyden. Palaeontogr., iv: 200. *Pl.* 38, *fig.* 3.

4820. Prionus polyphemus. (Cerambycidæ.)

Compared with P. faber L.

Locality: Oeningen, Baden. Horizon: Tortonian.

1865. Heer. Urwelt der Schweiz, 375. *Fig.* 250 on *p.* 376.
1872. " Monde prim. Suisse, 460. *Fig.* 250 on *p.* 461.
1876. " Prim. world Switz., ii: 31. *Fig.* 250 on *p.* 32.
1879. " Urwelt der Schweiz, 2^{e} aufl., 401. *Fig.* 292 on *p.* 402.

4802. Platynus desuetus. (Carabidæ.)

Compared with P. crenistriatus LeC.

Locality: Scarboro', Ontario. Horizon: Pleistocene.

1890. Scudder. Tert. ins. N. A., 521–522. *Pl.* 1, *figs.* 43, 51, 58.

4803. Platynus dissipatus. (Carabidæ.)

Locality: Scarboro', Ontario. Horizon: Pleistocene.

1890. Scudder. Tert. ins. N. A., 521. *Pl.* 1, *fig.* 37.

4804. Platynus gracilis (recent). (Carabidæ.)

Locality: Jarville, France. Horizon: Pleistocene.

[1827. Gyllenhal. Ins. suec., iv: 449.]

1886. Scudder. Bull. U. S. geol. surv., No. 31: 84.

4805. Platynus halli. (Carabidæ.)

Compared with P. crenistriatus LeC.

Locality: Scarboro', Ontario. Horizon: Pleistocene.

1890. Scudder. Tert. ins. N. A., 520–521. *Pl.* 1, *fig.* 41.

4806. Platynus harttii. (Carabidæ.)

Locality: Scarboro', Ontario. Horizon: Pleistocene.

1890. Scudder. Tert. ins. N. A., 522. *Pl.* 1, *fig.* 31.

4807. Platynus hindei. (Carabidæ.)

Compared with P. rubripes Zimm.

Locality: Scarboro', Ontario. Horizon: Pleistocene.

1890. Scudder. Tert. ins. N. A., 520. *Pl.* 1, *fig.* 54.

4808. Platynus senex. (Carabidæ.)

Compared with P. variolatus LeC., North America.

Locality: Green River, Wyo. Horizon: Oligocene.

1878. Scudder. Bull. U. S. geol. surv. terr., iv: 759.

1890. " Tert. ins. N. A., 519. *Pl.* 7, *fig.* 38.

4809. Platypus ——. (Scolytidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1832. Burmeister. Handb. ent., i: 635.

1836. " Man. ent., 577.

See also Platypus cylindricus.

4810. Platypus ——. (Scolytidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1825. Guérin. Dict. class. d'hist. nat., viii: 580 (Platype).

1829. Serres. Géogn. terrains tert., 241.

1845. Motschulsky. Bull. soc. imp. nat. Mosc., xviii, ii: 100.

4811. Platypus cylindricus. (Scolytidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1831. Burmeister. Oken, Isis, 1831: 1100.

See also Platypus —— Burmeister.

4812. Platypus maravignæ. (Scolytidæ.)

Locality: Sicilian amber. Horizon: ——.

1838. Guérin. Rev. zool., 1838: 170. *Pl.* 1, *fig.* 7.

Platysma oblongopunctata. See Feronia (Platysma) oblongopunctata.

4813. Plinthus heeri. (Curculionidæ.)

Locality: Aix, France. Horizon: Ligurian.

1874. Oustalet. Ann. sc. géol., v, art. 2: 279–281. *Pl.* 4, *fig.* 12.

4814. Plinthus redivivus. (Curculionidæ.)

Locality: Corent, France. Horizon: Aquitanian

1870. Oustalet. Ann. sc. géol., ii, art. 3: 74. *Pl.* 1, *fig.* 10.

Pœcilus ——. See Feronia (Pœcilus) ——.

4815. Polydrosus ——. (Otiorhynchidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1832. Burmeister. Handb. ent., i: 635 (Polydrusus).
1836. " Man. ent., 577.

Polydrusus ——. See Polydrosus ——.

4816. Polystichus ——. (Carabidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1845. Berendt. Bernst. befindl. organ. reste vorw., i: 56.

4817. Polystichus hopei. (Carabidæ.)

Locality: Aix, France. Horizon: Ligurian.

1874. Oustalet. Ann. sc. géol., v, art. 2: 119–120. *Pl.* 1, *fig.* 8.

4818. Prasocuris aucta var. egena (recent). (Chrysomelidæ.)

Locality: Hösbach, Bavaria. Horizon: Lower Pleistocene.

[1827. Gyllenhall. Ins. suec., iv: 549.]
1884. Flach. Käfer unterpleist. Hösbach, 10–11. *Pl.* 2, *fig.* 11.
1884. " Verhandl. physik.-med. gesellsch. Würzb., n. f., xviii: 294–295. *Pl.* 9, *fig.* 11.

Prasocuris egena. See Prasocuris aucta var. egena.

4819. Prionus? —— (borings). (Cerambycidæ.)

Locality: Salzhausen, Germany. Horizon: Miocene

1856. Heyden. Palaeontogr., iv: 200. *Pl.* 38, *fig.* 3.

4820. Prionus polyphemus. (Cerambycidæ.)

Compared with P. faber L.

Locality: Oeningen, Baden. Horizon: Tortonian.

1865. Heer. Urwelt der Schweiz, 375. *Fig.* 250 on *p.* 376.
1872. " Monde prim. Suisse, 460. *Fig.* 250 on *p.* 461.
1876. " Prim. world Switz., ii: 31. *Fig.* 250 on *p.* 32.
1879. " Urwelt der Schweiz, 2e aufl., 401. *Fig.* 292 on *p.* 402.

4821. Prionus spectabilis. (Cerambycidæ.)
Compared with P. coriarius L.
Locality: Oeningen, Baden. **Horizon:** Tortonian.

1865. Heer. Urwelt der Schweiz, 375. *Fig.* 251 on *p.* 376.
1872. " Monde prim. Suisse, 460. *Fig.* 251 on *p.* 461.
1876. " Prim. world Switz., ii: 31. *Fig.* 251 on *p.* 32.
1879. " Urwelt der Schweiz, 2e aufl., 401. *Fig.* 293 on *p.* 402.

4822. Prionus umbrinus. (Cerambycidæ.)
Compared with P. coriarius.
Locality: Vicinity Bonn, Rhenish Prussia. **Horizon:** Aquitanian ?.

1837. Germar. Oken, Isis, 1837: 423 (undescr.).
1837. " Fauna insect. Europæ, xix: 12. *Pl.* 12.
1852. Giebel. Deutschl. petref., 650.
1856. " Insect. d. vorwelt, 126.

4823. Pristorhynchus ellipticus. (Otiorhynchidæ.)
Locality: Oeningen, Baden. **Horizon:** Tortonian.

1847. Heer. Insektenf. tertiärg. Oeningen, i: 190–192. *Pl.* 6, *fig.* 10.
1852. Giebel. Deutschl. petref., 649.
1856. " Insect. d. vorwelt, 139.
1853–'56. Bronn. Lethæa geogn., 3e aufl., iii: 647.
1885. Scudder. Zittel, Handb. palaeont., i, th. ii: 789. *Fig.* 1010.
1886. " Zittel-Barrois, Traité de paléont., ii: 789. *Fig.* 1029.

4824. Prometopia depilis. (Nitidulidæ.)
Compared with P. sexmaculata.
Locality: Quesnel, British Columbia. **Horizon:** ——.

1877. Scudder. Rep. progr. geol. surv., Can., 1875–'76: 278–279.
1877. " Insect. tert. Quesnel, 13–14.
1877. " Rapp. opér. comm. géol. Can., 1875–'76: 308–309.
1890. " Tert. ins. N. A., 500. *Pl.* 2, *fig.* 29.

4825. Protactus erichsonii. (Staphylinidæ.)
Locality: Oeningen, Baden. **Horizon:** Tortonian.

1847. Heer. Insektenf. tertiärg. Oeningen, i: 28–34. *Pl.* 1, *figs.* 9, 9*a–c*, *e*, *f*.
1852. Giebel. Deutschl. petref., 654.
1854. Pictet. Traité de paléont., 2e éd., ii: 327–328. *Pl.* 40, *fig.* 13.
1856. Giebel. Insect. d. vorwelt, 75.
1853–'56. Bronn. Lethæa geogn., 3e aufl., iii: 648–649. *Pl.* 42', *figs.* 24*ab*.
1885. Scudder. Zittel, Handb. palaeont., i, th. ii: 801. *Fig.* 1058.
1886. " Zittel-Barrois, Traité de paléont., ii: 801. *Fig.* 1075.

4826. Protactus minor. (Staphylinidæ.)
Locality: Oeningen, Baden. **Horizon:** Tortonian.

1862. Heer. Verhandl. holl. maatsch. wetensch. Haarl., xvi: 45. *Pl.* 3, *fig.* 4.

4827. Protogenia escheri. (Buprestidæ.)
Locality: Oeningen, Baden. **Horizon:** Tortonian.

1847. Heer. Insektenf. tertiärg. Oeningen, i: 118–123. *Pl.* 2, *fig.* 16; *pl.* 8, *fig.* 6.
1852. Giebel. Deutschl. petref., 652.
1856. " Insect. d. vorwelt, 88–89.
1853–'56. Bronn. Lethæa geogn., 2e aufl., iii: 647–648. *Pl.* 42', *figs.* 27*a–c*.

4828. Protoscalidion rugiæ. (Carabidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1888. Schaufuss. Berl. ent. zeitschr., xxxii: 266–267.

4829. Pselaphus ——. (Pselaphidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1845. Berendt. Bernst. befindl. organ. reste vorw., i: 56.

4830. Pseudocistela ——. (Cistelidæ.)

Locality: Brunstatt, Alsatia. Horizon: Middle Oligocene.

1890. Foerster. In litt.

4831. Pseudo-elater ——. (Elateridæ?.)

Locality: (Oeningen?, Baden). Horizon: Tortonian.

1847. Heer. Insektenf. tertiärg. Oeningen, i: 143. *Pl.* 4, *fig.* 1.
1851. Stizenberg. Uebers. verstein. Baden, 89, 99 (says it is a fruit and = Diachænites Al. Braun).
1852. Giebel. Deutschl. petref., 651.
1856. " Insect. d. vorwelt, 94 (without name).

4832. Pterostichus ——. (Carabidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1845. Berendt. Bernst. befindl. organ. reste vorw., i: 56.

4833. Pterostichus? ——. (Carabidæ.)

Locality: Port Kennedy, Pa. Horizon: Postpliocene.

1876. Horn. Trans. Amer. ent. soc., v: 243.
1890. Scudder. Tert. ins. N. A., 529. *Pl.* 1, *fig.* 5.

4834. Pterostichus ——. (Carabidæ.)

Compared with P. coracinus or P. stygicus, United States.

Locality: Port Kennedy, Pa. Horizon: Postpliocene.

1876. Horn. Trans. Amer. entom. soc., v: 243.
See also Pterostichus lævigatus.

4835. Pterostichus ——. (Carabidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1856. Menge. Progr. petrischule Danzig, 1856: 23.

4836. Pterostichus ——. (Carabidæ.)

Locality: Wohlscheid, Germany. Horizon: Peat.

1852. Weber. Palaeontogr., ii: 229. *Pl.* 25, *fig.* 17.
See also Pterostichus angustus.

4837. Pterostichus ——. (Carabidæ.)

Locality: Wohlscheid, Germany. Horizon: Peat.

1852. Weber. Palaeontogr., ii: 229. *Pl.* 25, *fig.* 18.
See also Pterostichus rhenanus.

Pterostichus ——. See Feronia (Pterostichus) ——.

4838. Pterostichus abrogatus. (Carabidæ.)

Compared with P. herculanens Mann.

Locality: Scarboro', Ontario. Horizon: Pleistocene.

1890. Scudder. Tert. ins. N. A., 525. *Pl.* 1, *fig.* 39.

4839. Pterostichus angustus. (Carabidæ.)

Locality: Wohlscheid, Germany. Horizon: Peat.

1856. Giebel. Insect. d. vorwelt, 67.
See also Pterostichus ——— Weber, xxv: 18.

4840. Pterostichus antiquus. (Carabidæ.)

Locality: Oeningen, Baden. Horizon: Tortonian.

1856. Giebel. Insect. d. vorwelt, 66.
See also Argutor antiquus.

4841. Pterostichus destitutus. (Carabidæ.)

Compared with P. sayi Brullé.

Locality: Scarboro', Ontario. Horizon: Postpliocene.

1890. Scudder. Tert. ins. N. A., 526. *Pl.* 1, *fig.* 44.

4842. Pterostichus destructus. (Carabidæ.)

Compared with P. patruelis.

Locality: Scarboro', Ontario. Horizon: Postpliocene.

1890. Scudder. Tert. ins. N. A., 527. *Pl.* 1, *fig.* 46.

4843. Pterostichus dormitans. (Carabidæ.)

Compared with P. lætulus LeC.

Locality: Scarboro', Ontario. Horizon: Postpliocene.

1890. Scudder. Tert. ins. N. A., 526. *Pl.* 1, *figs.* 49, 55.

4844. Pterostichus fractus. (Carabidæ.)

Compared with P. destitutus Scudd.

Locality: Scarboro', Ontario. Horizon: Postpliocene.

1890. Scudder. Tert. ins. N. A., 527. *Pl.* 1, *figs.* 29, 30.

4845. Pterostichus gelidus. (Carabidæ.)

Compared with P. hudsonicus.

Locality: Scarboro', Ontario. Horizon: Postpliocen

1890. Scudder. Tert. ins. N. A., 527–528. *Pl.* 1, *figs.* 52, 59–61.
See also Loxandrus gelidus.

4846. Pterostichus lævigatus. (Carabidæ.)

Locality: Scarboro', Ontario. Horizon: Postpliocene.

1876. Horn. MSS.
1890. Scudder. Tert. ins. N. A., 528–529. *Pl.* 1, *figs.* 3, 4.
See also Pterostichus ——— Horn, cf. coracinus.

4847. Pterostichus madidus (recent). (Carabidæ.)

Locality: Norfolk, England. Horizon: Forest bed, Pleistocene.

1888. Bell. Entom., xxi: 2.
See also Pterostichus maurus.

4848. Pterostichus maurus (recent). (Carabidæ.)

Locality: England. Horizon: Pleistocene.

[1812. Duftschmid. Faun. austr., ii: 160.]
See also Pterostichus madidus.

4849. Pterostichus (Argutor) minutulus. (Carabidæ.)

Locality: Oeningen, Baden. Horizon: Tortonian.

1862. Heer. Verhandl. holl. maatsch. wetensch. Haarl., xvi: 22–23. *Pl.* 1, *fig.* 19.

4850. Pterostichus nigritus (recent). (Carabidæ.)

Localities: Dürnten, Schwerzenbach, Switzerland. Horizon: Interglacial clay.

[1792. Fabricius. Ent. syst., i: 158.]
1865. Heer. Urwelt der Schweiz, 502 (nigrita). *Fig.* 358 on *p.* 501.
1872. " Monde prim. Suisse, 615. *Fig.* 358 on *p.* 614.
1876. " Prim. world Switz., ii: 169. *Fig.* 358 on *p.* 168.
1879. " Urwelt der Schweiz, 2^{e} aufl., 531, 581. *Fig.* 401; *pl.* 12, *figs.* 15, 15*b*.
See also Omaseus nigritus.

4851. Pterostichus rhenanus. (Carabidæ.)

Locality: Wohlscheid, Germany. Horizon: Peat.

1856. Giebel. Insect. d. vorwelt, 66–67.
See also Pterostichus ——— Weber, xxv: 17.

4852. Pterostichus vernalis (recent). (Carabidæ.)

Locality: St. Jakob, Basel, Switzerland. Horizon: Interglacial.

[1796. Panzer. Fauna germ., xxx: 17.]
1879. Heer. Urwelt der Schweiz, 2^{e} aufl., 533.
See also Argutor vernalis.

4853. Pterostichus (Abax) vetustus. (Carabidæ.)

Locality: Oeningen, Baden. Horizon: Tortonian.

1862. Heer. Verhandl. holl. maatsch. wetensch. Haarl., xvi: 23. *Pl.* 1, *figs.* 11, 11*b*.

4854. Ptilinus ———. (Ptinidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1845. Berendt. Bernst. befindl. organ. reste vorw., i: 56.

4855. Ptilinus? ——— (borings). (Ptinidæ.)

Locality: Salzhausen, Germany. Horizon: Miocene.

1856. Heyden. Palaeontogr., iv: 199–200. *Pl.* 38, *figs.* 1, 2.

4856. Ptilodactyloides stipulicornis. (Dascyllidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1856. Motschulsky. Étud. entom., v: 26. *Pl.*, *figs.* 3, 3′.
1885. Scudder. Zittel, Handb. palaeont., i, th. ii: 798. *Fig.* 1039.
1886. “ Zittel-Barrois, Traité de paléont., ii: 798. *Fig.* 1057.

4857. Ptinus ——. (Ptinidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1845. Berendt. Bernst. befindl. organ. reste vorw., i: 56.

4858. Ptinus? ——. (Ptinidæ.)

Compared with P. lichenum Marsh.

Locality: Aix, France. Horizon: Ligurian.

1829. Curtis. Edinb. new phil. journ., vii: 295.
1829. “ Murchison-Lyell, Tert. form. Aix, 11.

4859. Ptinus antiquus. (Ptinidæ.)

Locality: Stösschen, Austria. Horizon: Miocene.

1859. Heyden. Palaeontogr., viii: 7. *Pl.* 1, *fig.* 8.

4860. Ptinus primordialis. (Ptinidæ.)

Locality: Rott, Rhenish Prussia. Horizon: Aquitanian.

1866. Heyd.-Heyd. Palaeontogr., xv: 143–144. *Pl.* 23, *fig.* 4.
1866. “ Käfer u. polypen, 13–14. *Pl.* 2, *fig.* 4.

4861. Ptinus salinus. (Ptinidæ.)

Locality: Wieliczka, Galicia. Horizon: Miocene.

1844. Schilling. Uebers. arb. u. veränd. schles. gesellsch. vaterl. cult., 1843: 175.
1848. Bronn. Index palaeont., Nomencl., 1058.
1856. Giebel. Insect. d. vorwelt, 77.

4862. Ptomaphagus germari. (Silphidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1888. Schlechtend. Zeitschr. ges. naturw., lxi: 483–486. *Fig.* 3.
See also Mordella inclusa, Mordellina inclusa.

4863. Pyrochroa ——. (Pyrochroidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1845. Berendt. Bernst. befindl. organ. reste vorw., i: 56.

4864. Pythonidium metallicum. (Pythidæ.)

Locality: Spitzbergen. Horizon ? Miocene.

1870. Heer. K. svenska vetensk.-akad. handl., viii, No. 7: 75. *Pl.* 16, *figs.* 12*ab*, 13, 14, 14*b*.
1885. Scudder. Zittel, Handb. palaeont., i, th. ii: 791. *Fig.* 1014.
1886. “ Zittel-Barrois, Traité de paléont., ii: 791. *Fig.* 1032.

4865. Quedius ——. (Staphylinidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1845. Berendt. Bernst. befindl. organ. reste vorw., i: 56.

4866. Quedius ———. (Staphylinidæ.)

Locality: Prussian amber. Horizon: Ligurian.
1856. Menge. Progr. petrischule Danzig, 1856: 23.

4867. Quedius breweri. (Staphylinidæ.)

Compared with Q. molochinus Grav.
Locality: Florissant, Colo. Horizon: Oligocene.
1890. Scudder. Tert. ins. N. A., 508–509. *Pl.* 16, *fig.* 4.

4868. Quedius chamberlini. (Staphylinidæ.)

Locality: Florissant, Colo. Horizon: Oligocene.
1890. Scudder. Tert. ins. N. A., 508. *Pl.* 16, *fig.* 8.

4869. Quedius lortetii. (Staphylinidæ.)

Compared with Q. picipes Mann., Europe.
Locality: Aix, France. Horizon: Ligurian.
1874. Oustalet. Ann. sc. géol., v, art. 2: 175–177. *Pl.* 3, *figs.* 4, 4*a*.

4870. Quedius reynesii. (Staphylinidæ.)

Compared with Q. impressus Panz., Europe.
Locality: Aix, France. Horizon: Ligurian.
1874. Oustalet. Ann. sc. géol., v, art. 2: 172–175. *Pl.* 3, *fig.* 3; *pl.* 6, *fig.* 15.

4871. Rhinobatus ———. (Curculionidæ.)

Compared with R. cynaræ.
Locality: Aix, France. Horizon: Ligurian.
1847. Hope. Trans. entom. soc. Lond., iv: 251.

4872. Rhinobatus ———. (Curculionidæ.)

Locality: Aix, France. Horizon: Ligurian.
1829. Serres. Géogn. terrains tert., 224, 267.
See also Larinus ——— Burm.

4873. Rhinocyllus improlus. (Curculionidæ.)

Locality: Rott, Rhenish Prussia. Horizon: Aquitanian.
1866. Heyd.-Heyd. Palaeontogr., xv: 151. *Pl.* 24, *fig.* 2.
1866. " Käfer u. polypen, 21. *Pl.* 3, *fig.* 2.

4874. Rhipidius primordialis. (Rhipiphoridæ.)

Locality: Prussian amber. Horizon: Ligurian.
1877. Stein. Mittheil. münch. entom. ver., i: 29–30.

4875. Rhipiphorus ———. (Rhipiphoridæ.)

Locality: Prussian amber. Horizon: Ligurian.
1845. Berendt. Bernst. befindl. organ. reste vorw., i: 56 (Ripiphorus).

4876. Rhipiphorus ———. (Rhipiphoridæ.)

Locality: Prussian amber. Horizon: Ligurian.
1856. Menge. Progr. petrischule Danzig, 1856: 21.

4856. Ptilodactyloides stipulicornis. (Dascyllidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1856. Motschulsky. Étud. entom., v: 26. *Pl.*, *figs.* 3, 3′.
1885. Scudder. Zittel, Handb. palaeont., i, th. ii: 798. *Fig.* 1039.
1886. " Zittel-Barrois, Traité de paléont., ii: 798. *Fig.* 1057.

4857. Ptinus ——. (Ptinidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1845. Berendt. Bernst. befindl. organ. reste vorw., i: 56.

4858. Ptinus? ——. (Ptinidæ.)

Compared with P. lichenum Marsh.

Locality: Aix, France. Horizon: Ligurian.

1829. Curtis. Edinb. new phil. journ., vii: 295.
1829. " Murchison-Lyell, Tert. form. Aix, 11.

4859. Ptinus antiquus. (Ptinidæ.)

Locality: Stösschen, Austria. Horizon: Miocene.

1859. Heyden. Palaeontogr., viii: 7. *Pl.* 1, *fig.* 8.

4860. Ptinus primordialis. (Ptinidæ.)

Locality: Rott, Rhenish Prussia. Horizon: Aquitanian.

1866. Heyd.-Heyd. Palaeontogr., xv: 143–144. *Pl.* 23, *fig.* 4.
1866. " Käfer u. polypen, 13–14. *Pl.* 2, *fig.* 4.

4861. Ptinus salinus. (Ptinidæ.)

Locality: Wieliczka, Galicia. Horizon: Miocene.

1844. Schilling. Uebers. arb. u. veränd. schles. gesellsch. vaterl. cult., 1843: 175.
1848. Bronn. Index palaeont., Nomencl., 1058.
1856. Giebel. Insect. d. vorwelt, 77.

4862. Ptomaphagus germari. (Silphidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1888. Schlechtend. Zeitschr. ges. naturw., lxi: 483–486. *Fig.* 3.
See also Mordella inclusa, Mordellina inclusa.

4863. Pyrochroa ——. (Pyrochroidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1845. Berendt. Bernst. befindl. organ. reste vorw., i: 56.

4864. Pythonidium metallicum. (Pythidæ.)

Locality: Spitzbergen. Horizon? Miocene.

1870. Heer. K. svenska vetensk.-akad. handl., viii, No. 7: 75. *Pl.* 16, *figs.* 12*ab*, 13, 14, 14*b*.
1885. Scudder. Zittel, Handb. palaeont., i, th. ii: 791. *Fig.* 1014.
1886. " Zittel-Barrois, Traité de paléont., ii: 791. *Fig.* 1032.

4865. Quedius ——. (Staphylinidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1845. Berendt. Bernst. befindl. organ. reste vorw., i: 56.

4866. Quedius ——. (Staphylinidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1856. Menge. Progr. petrischule Danzig, 1856: 23.

4867. Quedius breweri. (Staphylinidæ.)

Compared with Q. molochinus Grav.

Locality: Florissant, Colo. Horizon: Oligocene.

1890. Scudder. Tert. ins. N. A., 508–509. *Pl.* 16, *fig.* 4.

4868. Quedius chamberlini. (Staphylinidæ.)

Locality: Florissant, Colo. Horizon: Oligocene.

1890. Scudder. Tert. ins. N. A., 508. *Pl.* 16, *fig.* 8.

4869. Quedius lortetii. (Staphylinidæ.)

Compared with Q. picipes Mann., Europe.

Locality: Aix, France. Horizon: Ligurian.

1874. Oustalet. Ann. sc. géol., v, art. 2: 175–177. *Pl.* 3, *figs.* 4, 4*a*.

4870. Quedius reynesii. (Staphylinidæ.)

Compared with Q. impressus Panz., Europe.

Locality: Aix, France. Horizon: Ligurian.

1874. Oustalet. Ann. sc. géol., v, art. 2: 172–175. *Pl.* 3, *fig.* 3; *pl.* 6, *fig.* 15.

4871. Rhinobatus ——. (Curculionidæ.)

Compared with R. cynaræ.

Locality: Aix, France. Horizon: Ligurian.

1847. Hope. Trans. entom. soc. Lond., iv: 251.

4872. Rhinobatus ——. (Curculionidæ.)

Locality: Aix, France. Horizon: Ligurian.

1829. Serres. Géogn. terrains tert., 224, 267.
See also Larinus —— Burm.

4873. Rhinocyllus improlus. (Curculionidæ.)

Locality: Rott, Rhenish Prussia. Horizon: Aquitanian.

1866. Heyd.-Heyd. Palaeontogr., xv: 151. *Pl.* 24, *fig.* 2.
1866. " Käfer u. polypen, 21. *Pl.* 3, *fig.* 2.

4874. Rhipidius primordialis. (Rhipiphoridæ.)

Locality: Prussian amber. Horizon: Ligurian.

1877. Stein. Mittheil. münch. entom. ver., i: 29–30.

4875. Rhipiphorus ——. (Rhipiphoridæ.)

Locality: Prussian amber. Horizon: Ligurian.

1845. Berendt. Bernst. befindl. organ. reste vorw., i: 56 (Ripiphorus).

4876. Rhipiphorus ——. (Rhipiphoridæ.)

Locality: Prussian amber. Horizon: Ligurian.

1856. Menge. Progr. petrischule Danzig, 1856: 21.

4877. Rhipiphorus geikiei. (Rhipiphoridæ.)

Locality: Florissant, Colo. Horizon: Oligocene.

1890.	Scudder.	Tert. ins. N. A., 482–483. *Pl.* 27, *fig.* 1.

4878. Rhizophagus ——. (Nitidulidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1845.	Berendt.	Bernst. befindl. organ. reste vorw., i: 56.

4879. Rhizotrogus longimanus. (Scarabæidæ.)

Compared with R. paganus Oliv., Southern Europe.

Locality: Oeningen, Baden. Horizon: Tortonian.

1847.	Heer.	Insektenf. tertiärg. Oeningen, i: 69–71. *Pl.* 7, *fig.* 29.
1852.	Giebel.	Deutschl. petref., 652.
1856.	"	Insect. d. vorwelt, 32–33.
1865.	Heer.	Urwelt der Schweiz, 380.
1872.	"	Monde prim. Suisse, 466.
1876.	"	Prim. world Switz., ii: 37.
1879.	"	Urwelt der Schweiz, 2^e aufl., 406.

4880. Rhizotrogus solstitialis (recent). (Scarabæidæ.)

Locality: Flanders. Horizon: Peat.

[1746.	Linné.	Faun. suec., 137.]
1873.	Debray.	Mem soc. sc. agric. arts Lille, (3), xi: 451.
1885.	Scudder.	Zittel, Handb. palaeont., i, th. ii: 794.
1886.	"	Zittel-Barrois, Traité de paléont., ii: 795.
1886.	"	Bull. U. S. geol. surv., No. 31: 74.

4881. Rhynchænus solieri. (Curculionidæ.)

Locality: Aix, France. Horizon: Ligurian.

1847.	Hope.	Trans. ent. soc. Lond., iv: 255. *Pl.* 19, *figs.* 2, 2^a.
1856.	Giebel.	Insect. d. vorwelt, 146–147.

See also Hylobius? solieri.

4882. Rhynchites ——. (Rhynchitidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1845.	Berendt.	Bernst. befindl. organ. reste vorw., i: 56.

4883. Rhynchites ——. (Rhynchitidæ.)

Locality: Aix, France. Horizon: Ligurian.

1847.	Hope.	Trans. ent. soc. Lond., iv: 251.

4884. Rhynchites dionysus. (Rhynchitidæ.)

Locality: Oeningen, Baden. Horizon: Tortonian

1865.	Heer.	Urwelt der Schweiz. *Fig.* 243 on *p.* 371.
1872.	"	Monde prim. Suisse. *Fig.* 243 on *p.* 455.
1876.	"	Prim. world Switz., ii. *Fig.* 243 on *p.* 27.
1879.	"	Urwelt der Schweiz, 2^e aufl. *Fig.* 285 on *p.* 397.

4885. Rhynchites hageni. (Rhynchitidæ.)

Locality: Rott, Rhenish Prussia. Horizon: Aquitanian.

1866.	Heyd.-Heyd.	Palaeontogr., xv: 147. *Pl.* 23, *fig.* 6.
1866.	"	Käfer u. polypen, 17. *Pl.* 2, *fig.* 6.

4886. Rhynchites orcinus. (Rhynchitidæ.)

Locality: Rott, Rhenish Prussia. Horizon: Aquitanian.

1866. Heyd.-Heyd. Palaeontogr., xv: 147–148. *Pl.* 23, *fig.* 7.
1866. “ Käfer u. polypen, 17–18. *Pl.* 2, *fig.* 7.
1870. L. Heyden. Foss. dipt. Rott, 29.
1870. “ Palaeontogr., xvii: 265.

4887. Rhynchites silenus. (Rhynchitidæ.)

Locality: Oeningen, Baden.* Horizon: Tortonian.

1847. Heer. Insektenf. tertiärg. Oeningen, i: 180. *Pl.* 6, *fig.* 8.
1852. Giebel. Deutschl. petref., 649.
1856. “ Insect. d. vorwelt, 135–136.
1865. Heer. Urwelt der Schweiz, 362, 373.
1872. “ Monde prim. Suisse, 444, 458.
1876. “ Prim. world Switz., ii: 16, 29.
1879. “ Urwelt der Schweiz, 2ᵉ aufl., 387, 399.

Ripiphorus ——. See Rhipiphorus —— Berendt.

4888. Saperda ——. (Cerambycidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1845. Berendt. Bernst. befindl. organ. reste vorw., i: 56.

4889. Saperda ——. (Cerambycidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1856. Menge. Progr. petrischule Danzig, 1856: 21.

4890. Saperda —— (larva). (Cerambycidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1885. Scudder. Zittel, Handb. palaeont., i, th. ii: 793. *Figs.* 1023, 1023*a*.
1886. “ Zittel-Barrois, Traité de paléont., ii: 793. *Figs.* 1041*ab*.

4891. Saperda absyrti. (Cerambycidæ.)

Locality: Radoboj, Croatia. Horizon: Mayencian.

1847. Heer. Insektenf. tertiärg. Oeningen, i: 171–172. *Pl.* 6, *fig.* 2.
1852. Giebel. Deutschl. petref., 650.
1856. “ Insect. d. vorwelt, 132.

4892. Saperda lata. (Cerambycidæ.)

Compared with S. carcharias.

Locality: Vicinity Bonn, Rhenish Prussia. Horizon: Aquitanian?

1837. Germar. Fauna insect. Europæ, xix: 13. *Pl.* 13.
1852. Giebel. Deutschl. petref., 649.
1856. “ Insect. d. vorwelt, 131.

4893. Saperda nephele. (Cerambycidæ.)

Locality: Oeningen, Baden. Horizon: Tortonian.

1852. Giebel. Deutschl. petref., 649.
1856. “ Insect. d. vorwelt, 131–132.
1865. Heer. Urwelt der Schweiz, 375.
1872. “ Monde prim. Suisse, 460.
1876. “ Prim. world Switz., ii: 31.
1879. “ Urwelt der Schweiz, 2ᵉ aufl., 401.

See also Saperda (Compsidia) nephele.

4894. Saperda (Compsidia) nephele. (Cerambycidæ.)

Locality: Oeningen, Baden. Horizon: Tortonian.

1847. Heer. Insektenf. tertiärg. Oeningen, i: 168–171. *Pl.* 6, *fig.* 1.
See also Saperda nephele.

4895. Saperda valdensis. (Cerambycidæ.)

Locality: Rovereaz, (Switzerland?). Horizon: Miocene.

1865. Heer. Urwelt der Schweiz. *Fig.* 254 on *p.* 376.
1872. “ Monde prim. Suisse. *Fig.* 254 on *p.* 461.
1876. “ Prim. world Switz., ii. *Fig.* 254 on *p.* 32.
1879. “ Urwelt der Schweiz, 2^e aufl. *Fig.* 296 on *p.* 402.

4896. Scaphidium ——. (Scaphidiidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1845. Berendt. Bernst. befindl. organ. reste vorw., i: 56.

4897. Scaphidium deletum. (Scaphidiidæ.)

Locality: (Oeningen, Baden). Horizon: Tortonian.

1847. Heer. Insektenf. tertiärg. Oeningen, i: 35–36. *Pl.* 7, *fig.* 20.
1852. Giebel. Deutschl. petref., 654.
1856. “ Insect. d. vorwelt, 47.
1862. Heer. Verhandl. holl. maatsch. wetensch. Haarl., xvi: 50.

4898. Scaphisoma gracile. (Scaphidiidæ.)

Locality: Oeningen, Baden. Horizon: Tortonian.

1862. Heer. Verhandl. holl. maatsch. wetensch. Haarl., xvi: 49–50. *Pl.* 3, *fig.* 26.

4899. Scarabæus ——. (Scarabæidæ.)

Locality: Glaris, Switzerland. Horizon: ——.

1763. Bertrand. Dict. univ. foss., i: 259.

4900. Scarabæus proserpinæ. (Scarabæidæ.)

Locality: Oeningen, Baden. Horizon: Tortonian.

1862. Heer. Verhandl. holl. maatsch. wetensch. Haarl., xvi: 78. *Pl.* 6, *fig.* 2.

4901. Scarites haidingeri. (Carabidæ.)

Locality: Radoboj, Croatia. Horizon: Mayencian.

1861. Heer. Rech. climat pays tert., 205 (undescr.).

4902. Scolytus ——. (Scolytidæ.)

Locality: Aix, France. Horizon: Ligurian.

1829. Serres. Géogn. terrains tert., 224–225.

4903. Scraptia ovata. (Melandryidæ.)

Locality: Sicilian amber. Horizon: ——.

1838. Guérin. Rev. zool., 1838: 170. *Pl.* 1, *fig.* 6.
1885. Scudder. Zittel, Handb. palaeont., i, th. ii: 791. *Fig.* 1015.
1886. “ Zittel-Barrois, Traité de paléont., ii: 791. *Fig.* 1033.

4904. **Scydmænoides nigrescens.** (Scydmænidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1856. Motschulsky. Étud. entom., v: 27.
See also Dorcasoides bilobus.

4905. **Scydmænus** ——. (Scydmænidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1845. Berendt. Bernst. befindl. organ. reste vorw., i: 56.

4906. **Scydmænus heerii.** (Scydmænidæ.)

Compared with Chevrolatia insignis (Jacq. du Val), Europe.

Locality: Aix, France. Horizon: Ligurian.

1874. Oustalet. Ann. sc. géol., v, art. 2: 183–184. *Pl.* 1, *fig.* 10.

4907. **Scymnus?** ——. (Coccinellidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1845. Berendt. Bernst. befindl. organ. reste vorw., i: 56.

4908. **Scymnus** ——. (Coccinellidæ.)

Locality: Brunstatt, Alsatia. Horizon: Middle Oligocene.

1890. Foerster. In litt.

4909. **Scyrtes** ——. (Dascyllidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1845. Berendt. Bernst. befindl. organ. reste vorw., i: 56.

4910. **Seniaulus scaphioides.** (Scaphidiidæ.)

Locality: Rott, Rhenish Prussia. Horizon: Aquitanian.

1866. Heyd.-Heyd. Palaeontogr., xv: 139. *Pl.* 22, *fig.* 17.
1866. " Käfer u. polypen, 9. *Pl.* 1, *fig.* 17.
1885. Scudder. Zittel, Handb. palaeont., i, th. ii: 801. *Fig.* 1057.
1886. " Zittel-Barrois, Traité de paléont., ii: 801. *Fig.* 1074.

4911. **Sepidium** ——. (Tenebrionidæ.)

Compared with S. hispanicum.

Locality: Aix, France. Horizon: Ligurian.

1829. Serres. Géogn. terrains tert., 222.

4912. **Serica** ——. (Scarabæidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1862. Giebel. Zeitschr. ges. naturwiss., xx: 321.

4913. **Serica minutula.** (Scarabæidæ.)

Compared with S. strigosa Dej.

Locality: Oeningen, Baden. Horizon: Tortonian.

1862. Heer. Verhandl. holl. maatsch. wetensch. Haarl., xvi: 79–80. *Pl.* 6, *fig.* 12.
1865. " Urwelt der Schweiz, 380.
1872. " Monde prim. Suisse, 466.
1876. " Prim. world Switz., ii: 37.
1879. " Urwelt der Schweiz, 2e aufl., 406.

4914. Sibynes melancholicus. (Curculionidæ.)

Compared with S. primitus Herbst, Europe.

Locality: Aix, France. Horizon: Ligurian.

1874. Oustalet. Ann. sc. géol., v, art. 2: 296–297 (Sybines). *Pl.* 5, *fig.* 8.

4915. Silicernius spectabilis. (Elateridæ.)

Locality: Rott, Rhenish Prussia. Horizon: Aquitanian.

1859. Heyden. Palaeontogr., viii: 6–7. *Pl.* 1, *fig.* 9.
1885. Scudder. Zittel, Handb. palaeont., i, th. ii: 797. *Fig.* 1037.
1886. " Zittel-Barrois, Traité de paléont., ii: 798. *Fig.* 1055.

4916. [Omitted.]

4917. Silpha (Phosphuga) atrata (recent). (Silphidæ.)

Locality: Hösbach, Bavaria. Horizon: Lower Pleistocene.

[1746. Linné. Faun. suec. no. 451.]
1884. Flach. Käfer unterpleist. Hösbach, 9. *Pl.* 2, *fig.* 6.
1884. " Verhandl. physik.-med. gesellsch. Würzb., n. f., xviii: 293. *Pl.* 9, *fig.* 6.

4918. Silpha? deplanata. (Silphidæ.)

Locality: Cap Staratschin, Spitzbergen. Horizon: Miocene.

1870. Heer. K. svenska vetensk.-akad. handl., viii, No. 7: 73–74. *Pl.* 16, *fig.* 42.

4919. Silpha dispar (recent). (Silphidæ.)

Localities: Schwerzenbach, Switzerland; Norfolk, England. Horizon: Glacial clay, Forest bed, Pleistocene.

[1793. Herbst. Käfer, v: 204. *Pl.* 52, *fig.* 1.]
1879. Heer. Urwelt der Schweiz, 2^e aufl., 581.
1886. Scudder. Bull. U. S. geol. surv., No 31: 82.
1888. Bell. Entom., xxi: 2.

4920. Silpha obsoleta. (Silphidæ.)

Locality: Radoboj, Croatia. Horizon: Mayencian.

1847. Heer. Insektenf. tertiärg. Oeningen, i: 36. *Pl.* 2, *fig.* 7.
1852. Giebel. Deutschl. petref., 654.
1856. " Insect. d. vorwelt, 46.

4921. Silpha stratuum. (Silphidæ.)

Compared with S. littoralis.

Locality: Vicinity Bonn, Rhenish Prussia. Horizon: Aquitanian?.

1837. Germar. Fauna insect. Europæ, xix: 5. *Pl.* 5.
1847. Heer. Insektenf. tertiärg. Oeningen, i: 33–34.
1852. Giebel. Deutschl. petref., 654.
1856. " Insect. d. vorwelt, 46.

4922. **Silpha tricostata.** (Silphidæ.)

Compared with S. carinata Heer.

Locality: Oeningen, Baden. Horizon: Tortonian.

1862. Heer. Verhandl. holl. maatsch. wetensch. Haarl., xvi: 50–51. *Pl.* 3, *figs.* 7, 7*b*, 8.
1865. " Urwelt der Schweiz, 382. *Fig.* 275 on *p.* 381.
1872. " Monde prim. Suisse, 468. *Fig.* 275 on *p.* 467.
1876. " Prim. world Switz., ii: 39. *Fig.* 275 on *p.* 38.
1879. " Urwelt der Schweiz, 2ᵉ aufl., 408. *Fig.* 317 on *p.* 407.
1885. Scudder. Zittel, Handb. palaeont., i, th. ii: 802. *Fig.* 1061.
1886. " Zittel-Barrois, Traité de paléont., ii: 802. *Fig.* 1078.

See also Peltis tricostata.

4923. **Silvanus** ——— (3 sp.). (Cucujidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1856. Menge. Progr. petrischule Danzig, 1856: 21.

4924. **Sinis brevicollis.** (Carabidæ.)

Locality: Oeningen, Baden. Horizon: Tortonian.

1862. Heer. Verhandl. holl. maatsch. wetensch. Haarl., xvi: 32–33. *Pl.* 1, *figs.* 16, 17.
1865. " Urwelt der Schweiz, 385. *Fig.* 286 on *p.* 384.
1872. " Monde prim. Suisse, 472. *Fig.* 286 on *p.* 471.
1876. " Prim. world Switz., ii: 42. *Fig.* 286.
1879. " Urwelt der Schweiz, 2ᵉ aufl., 411. *Fig.* 328 on *p.* 410.

4925. **Sisyphus** ———. (Scarabæidæ.)

Compared with S. schæfferi.

Locality: Aix, France. Horizon: Ligurian.

1829. Serres. Géogn. terrains tert., 222.

4926. **Sitodrepa defuncta.** (Ptinidæ.)

Locality: Green River, Wyo. Horizon: Oligocene.

1876. Scudder. Bull. U. S. geol. surv. terr., ii: 82.
1878. " Bull. U. S. geol. surv. terr., iv: 762.
1890. " Tert. ins. N. A., 493.

Sitona ———. See Sitones ——— Curtis.

Sitona attavina. See Sitones atavinus.

4927. **Sitones** ———. (Curculionidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1845. Berendt. Bernst. befindl. organ. reste vorw., i: 56.

4928. **Sitones** ———. (Curculionidæ.)

Locality: Aix, France. Horizon: Ligurian.

1829. Curtis. Edinb. new phil. journ., vii: 295 (Sitona). *Pl.* 6, *fig.* 2.
1829. " Murchison-Lyell, Tert. form. Aix, 11. *Pl.* 6, *fig.* 2.

See also Sitones margarum, S. antiquus.

4929. Sitones antiquus. (Curculionidæ.)

Locality: Aix, France. Horizon: Ligurian.

1856. Giebel. Insect. d. vorwelt, 141 (Sitona antiqua).
See also Sitones ——— Curtis, etc.

4930. Sitones atavinus. (Curculionidæ.)

Locality: Oeningen, Baden. Horizon: Tortonian.

1847. Heer. Insektenf. tertiärg. Oeningen, i: 182–183 (Sitona attavina). *Pl.* 6, *fig.* 11.
1852. Giebel. Deutschl. petref., 649 (Sitona attavina).
1856. " Insect. d. vorwelt, 141.
1865. Heer. Urwelt der Schweiz, 375 (Sitona). *Fig.* 248 on *p.* 371.
1872. " Monde prim. Suisse, 459. *Fig.* 248 on *p.* 455.
1876. " Prim. world Switz., ii: 30. *Fig.* 248 on *p.* 27.
1879. " Urwelt der Schweiz, 2^e aufl., 400. *Fig.* 290 on *p.* 397.

4931. Sitones grandævus. (Curculionidæ.)

Locality: Green River, Wyo. Horizon: Oligocene.

1876. Scudder. Bull. U. S. geol. surv. terr., ii: 83–84.
1878. " Bull. U. S. geol. surv. terr., iv: 767.
See also Eugnamptus grandævus.

4932. Sitones margarum. (Curculionidæ.)

Locality: Aix, France. Horizon: Ligurian.

1849. Germar. Zeitschr. deutsch. geol. gesellsch., i: 61–62 (Sitona). *Pl.* 2, *fig.* 5.
1856. Heer. Viert. naturf. gesellsch. Zürich, i: 19 (Sitona).
1856. Giebel. Insect. d. vorwelt, 141 (Sitona).
1874. Oustalet. Ann. sc. géol., v, art. 2: 246–253. *Pl.* 3, *fig.* 15.
See also Sitones ——— Curtis, etc.

4933. Sitones venustulus. (Curculionidæ.)

Locality: Rott, Rhenish Prussia. Horizon: Aquitanian.

1866. Heyd.-Heyd. Palaeontogr., xv: 149. *Pl.* 23, *fig.* 10.
1866. " Käfer u. polypen, 19. *Pl.* 2, *fig.* 10.
1870. L. Heyden. Foss. dipt. Rott, 29.
1870. " Palaeontogr., xvii: 265.

4934. Smicronyx ———. (Curculionidæ.)

Locality: Brunstatt, Alsatia. Horizon: Middle Oligocene.

1889. Foerster. Mitth. comm. geol. Elsass-Lothr., ii: 102.

4935. Sospita haagi. (Coccinellidæ.)

Locality: Rott, Rhenish Prussia. Horizon: Aquitanian.

1870. L. Heyden. Foss. dipt. Rott, 29.
1870. " Palaeontogr., xvii: 265.
See also Coccinella (Sospita) haagi.

4936. Spermophagus vivificatus. (Bruchidæ.)

Locality: Florissant, Colo. Horizon: Oligocene.

1876. Scudder. Bull. U. S. geol. surv. terr., ii: 82.
1885. " Zittel, Handb. palaeont., i, th. ii: 792. *Fig.* 1019.
1886. " Zittel-Barrois, Traité de paléont., ii: 792. *Fig.* 1037.

4937. Sphenophorus nægelianus. (Calandridæ.)

Locality: (Oeningen ?, Baden.) Horizon: Tortonian.

1847. Heer. Insektenf. tertiärg. Oeningen, i: 193–195. *Pl.* 6, *fig.* 16.
1852. Giebel. Deutschl. petref., 648.
1856. " Insect. d. vorwelt, 138–139.
See also Entychirus (Otiorhynchus) induratus.

4938. Sphenophorus proluviosus. (Calandridæ.)

Locality: Rott, Rhenish Prussia. Horizon: Aquitanian.

1866. Heyd.-Heyd. Palaeontogr., xv: 153–154. *Pl.* 24, *fig.* 9.
1866. " Käfer u. polypen, 23–24. *Pl.* 3, *fig.* 9.

4939. Sphenophorus regelianus. (Calandridæ.)

Locality: (Oeningen ?, Baden.) Horizon: Tortonian.

1847. Heer. Insektenf. tertiärg. Oeningen, i: 195–196. *Pl.* 6, *fig.* 17.
1852. Giebel. Deutschl. petref., 648.
1856. " Insect. d. vorwelt, 139.
See also Eurychirus (Otiorhynchus) induratus.

4940. Sphenoptera gigantea. (Buprestidæ.)

Locality: Oeningen, Baden. Horizon: Tortonian.

1847. Heer. Insektenf. tertiärg. Oeningen, i: 117–118. *Pl.* 3, *fig.* 12.
1852. Giebel. Deutschl. petref., 652.
1856. " Insect. d. vorwelt, 86–87.

4941. Sphenoptera knopi. (Buprestidæ.)

Locality: Salzhausen, Germany. Horizon: Miocene.

1865. Heyd.-Heyd. Palaeontogr., xiv: 33. *Pl.* 9, *fig.* 17.

4942. Spondylis ——— (larva). (Spondylidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1885. Scudder. Zittel, Handb. palaeont., i, th. ii: 794. *Figs.* 1025, 1025*a*.
1886. " Zittel-Barrois, Traité de paléont., ii: 794. *Figs.* 1043*ab*.

4943. Spondylis crassicornis. (Spondylidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1856. Giebel. Insect. d. vorwelt, 127.

4944. Spondylis tertiarius. (Spondylidæ.)

Locality: ———. Horizon: ———.

1849. Germar. Zeitschr. deutsch. geol. gesellsch., i: 58–60. *Pl.* 2, *fig.* 3.
1852. Giebel. Deutschl. petref., 651 (Spondylis ?).
1856. " Insect. d. vorwelt, 127 (tertiaria).
1885. Scudder. Zittel, Handb. palaeont., i, th. ii: 794. *Fig.* 1024.
1886. " Zittel-Barrois, Traité de paléont., ii: 794. *Fig.* 1042.

4945. Staphylinites obsoletus. (Staphylinidæ.)

Locality: Green River, Wyo. Horizon: Oligocene.

1876. Scudder. Bull. U. S. geol. surv. terr., ii: 78 (obsoletum).
1878. " Bull. U. S. geol. surv. terr., iv: 762.
1890. " Tert. ins. N. A., 510. *Pl.* 8, *fig.* 32.

4929. Sitones antiquus. (Curculionidæ.)

Locality: Aix, France. Horizon: Ligurian.

1856.	Giebel.	Insect. d. vorwelt, 141 (Sitona antiqua).

See also Sitones —— Curtis, etc.

4930. Sitones atavinus. (Curculionidæ.)

Locality: Oeningen, Baden. Horizon: Tortonian.

1847.	Heer.	Insektenf. tertiärg. Oeningen, i: 182–183 (Sitona attavina). *Pl.* 6, *fig.* 11.
1852.	Giebel.	Deutschl. petref., 649 (Sitona attavina).
1856.	“	Insect. d. vorwelt, 141.
1865.	Heer.	Urwelt der Schweiz, 375 (Sitona). *Fig.* 248 on *p.* 371.
1872.	“	Monde prim. Suisse, 459. *Fig.* 248 on *p.* 455.
1876.	“	Prim. world Switz., ii: 30. *Fig.* 248 on *p.* 27.
1879.	“	Urwelt der Schweiz, 2e aufl., 400. *Fig.* 290 on *p.* 397.

4931. Sitones grandævus. (Curculionidæ.)

Locality: Green River, Wyo. Horizon: Oligocene.

1876.	Scudder.	Bull. U. S. geol. surv. terr., ii: 83–84.
1878.	“	Bull. U. S. geol. surv. terr., iv: 767.

See also Eugnamptus grandævus.

4932. Sitones margarum. (Curculionidæ.)

Locality: Aix, France. Horizon: Ligurian.

1849.	Germar.	Zeitschr. deutsch. geol. gesellsch., i: 61–62 (Sitona). *Pl.* 2, *fig.* 5.
1856.	Heer.	Viert. naturf. gesellsch. Zürich, i: 19 (Sitona).
1856.	Giebel.	Insect. d. vorwelt, 141 (Sitona).
1874.	Oustalet.	Ann. sc. géol., v, art. 2: 246–253. *Pl.* 3, *fig.* 15.

See also Sitones —— Curtis, etc.

4933. Sitones venustulus. (Curculionidæ.)

Locality: Rott, Rhenish Prussia. Horizon: Aquitanian.

1866.	Heyd.-Heyd.	Palaeontogr., xv: 149. *Pl.* 23, *fig.* 10.
1866.	“	Käfer u. polypen, 19. *Pl.* 2, *fig.* 10.
1870.	L. Heyden.	Foss. dipt. Rott, 29.
1870.	“	Palaeontogr., xvii: 265.

4934. Smicronyx ——. (Curculionidæ.)

Locality: Brunstatt, Alsatia. Horizon: Middle Oligocene.

1889.	Foerster.	Mitth. comm. geol. Elsass-Lothr., ii: 102.

4935. Sospita haagi. (Coccinellidæ.)

Locality: Rott, Rhenish Prussia. Horizon: Aquitanian.

1870.	L. Heyden.	Foss. dipt. Rott, 29.
1870.	“	Palaeontogr., xvii: 265.

See also Coccinella (Sospita) haagi.

4936. Spermophagus vivificatus. (Bruchidæ.)

Locality: Florissant, Colo. Horizon: Oligocene.

1876.	Scudder.	Bull. U. S. geol. surv. terr., ii: 82.
1885.	“	Zittel, Handb. palaeont., i, th. ii: 792. *Fig.* 1019.
1886.	“	Zittel-Barrois, Traité de paléont., ii: 792. *Fig.* 1037.

4937. Sphenophorus naegelianus. (Calandridæ.)

Locality: (Oeningen ?, Baden.) **Horizon**: Tortonian.

1847. Heer. Insektenf. tertiärg. Oeningen, i: 193–195. *Pl.* 6, *fig.* 16.
1852. Giebel. Deutschl. petref., 648.
1856. " Insect. d. vorwelt, 138–139.
See also Eurychirus (Otiorhynchus) induratus.

4938. Sphenophorus proluviosus. (Calandridæ.)

Locality: Rott, Rhenish Prussia. **Horizon**: Aquitanian.

1866. Heyd.-Heyd. Palaeontogr., xv: 153–154. *Pl.* 24, *fig.* 9.
1866. " Käfer u. polypen, 23–24. *Pl.* 3, *fig.* 9.

4939. Sphenophorus regelianus. (Calandridæ.)

Locality: (Oeningen ?, Baden.) **Horizon**: Tortonian.

1847. Heer. Insektenf. tertiärg. Oeningen, i: 195–196. *Pl.* 6, *fig.* 17.
1852. Giebel. Deutschl. petref., 648.
1856. " Insect. d. vorwelt, 139.
See also Eurychirus (Otiorhynchus) induratus.

4940. Sphenoptera gigantea. (Buprestidæ.)

Locality: Oeningen, Baden. **Horizon**: Tortonian.

1847. Heer. Insektenf. tertiärg. Oeningen, i: 117–118. *Pl.* 3, *fig.* 12.
1852. Giebel. Deutschl. petref., 652.
1856. " Insect. d. vorwelt, 86–87.

4941. Sphenoptera knopi. (Buprestidæ.)

Locality: Salzhausen, Germany. **Horizon**: Miocene.

1865. Heyd.-Heyd. Palaeontogr., xiv: 33. *Pl.* 9, *fig.* 17.

4942. Spondylis ——— (larva). (Spondylidæ.)

Locality: Prussian amber. **Horizon**: Ligurian.

1885. Scudder. Zittel, Handb. palaeont., i, th. ii: 794. *Figs.* 1025, 1025*a*.
1886. " Zittel-Barrois, Traité de paléont., ii: 794. *Figs.* 1043*ab*.

4943. Spondylis crassicornis. (Spondylidæ.)

Locality: Prussian amber. **Horizon**: Ligurian.

1856. Giebel. Insect. d. vorwelt, 127.

4944. Spondylis tertiarius. (Spondylidæ.)

Locality: ———. **Horizon**: ———.

1849. Germar. Zeitschr. deutsch. geol. gesellsch., i: 58–60. *Pl.* 2, *fig.* 3.
1852. Giebel. Deutschl. petref., 651 (Spondylis ?).
1856. " Insect. d. vorwelt, 127 (tertiaria).
1885. Scudder. Zittel, Handb. palaeont., i, th. ii: 794. *Fig.* 1024.
1886. " Zittel-Barrois, Traité de paléont., ii: 794. *Fig.* 1042.

4945. Staphylinites obsoletus. (Staphylinidæ.)

Locality: Green River, Wyo. **Horizon**: Oligocene.

1876. Scudder. Bull. U. S. geol. surv. terr., ii: 78 (obsoletum).
1878. " Bull. U. S. geol. surv. terr., iv: 762.
1890. " Tert. ins. N. A., 510. *Pl.* 8, *fig.* 32.

4946. Staphylinus ——. (Staphylinidæ.)

Compared with S. œnocephalus.

Locality: (Senigaglia ?, Italy.) Horizon: Helvetian ?.

1841. Bassi. Atti reun. scienz. ital., iii: 401.

4947. Staphylinus ——. (Staphylinidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1830. Berendt. Insekten im bernstein, 34.

4948. Staphylinus ——. (Staphylinidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1835. Gravenhorst. Uebers. schles. gesellsch. vaterl. cult., 1834: 92.

4949. Staphylinus ? ——. (Staphylinidæ.)

Locality: Sicilian amber. Horizon: ——.

1838. Guérin. Rev. zool., 1838: 170.

4950. Staphylinus —— (larva). (Staphylinidæ.)

Locality: Rott, Rhenish Prussia. Horizon: Aquitanian.

1866. Heyd.-Heyd. Palaeontogr., xv: 138–139. *Pl.* 22, *fig.* 16.
1866. " Käfer u. polypen, 8–9. *Pl.* 1, *fig.* 16.

4951. Staphylinus ——. (Staphylinidæ.)

Locality: Aix, France. Horizon: Ligurian.

1829. Serres. Géogn. terrains tert., 221.

4952. Staphylinus ——. (Staphylinidæ.)

Locality: Gurnet Bay, Isle of Wight. Horizon: Bembridge Limestone.

1879. Woodward. Quart. journ. geol. soc. Lond., xxxv: 344.
1879. " Geol. mag., n. s., v: 89.

4953. Staphylinus aquisextanus. (Staphylinidæ.)

Compared with S. hirtus, Europe.

Locality: Aix, France. Horizon: Ligurian.

1874. Oustalet. Ann. sc. géol., v, art. 2: 160–162. *Pl.* 2, *fig.* 14.

4954. Staphylinus atavus. (Staphylinidæ.)

Locality: Oeningen, Baden. Horizon: Tortonian.

1862. Heer. Verhandl. holl. maatsch. wetensch. Haarl., xvi: 48–49 (distinct from Oustalet's species). *Pl.* 3, *fig.* 1.

4955. Staphylinus (Ocypus) atavus. (Staphylinidæ.)

Compared with Ocypus pedator Grav., Europe.

Locality: Aix, France. Horizon: Ligurian.

1874. Oustalet. Ann. sc. géol., v, art. 2: 162–163 (distinct from Heer's species). *Pl.* 2, *fig.* 8.

4956. Staphylinus calvus. (Staphylinidæ.)

Locality: Aix, France. Horizon: Ligurian.

1874. Oustalet. Ann. sc. géol., v, art. 2: 155–157. *Pl.* 2, *fig.* 9.

4957. Staphylinus (Ocypus) germarii. (Staphylinidæ.)

Locality: Aix, France. Horizon: Ligurian.

1874. Oustalet. Ann. sc. géol., v, art. 2: 157–159. *Pl.* 2, *fig.* 13.

4958. Staphylinus priscus. (Staphylinidæ.)

Locality: Aix, France. Horizon: Ligurian.

1874. Oustalet. Ann. sc. géol., v, art. 2: 166–167. *Pl.* 2, *fig.* 11.

4959. Staphylinus prodromus. (Staphylinidæ.)

Locality: Aix, France. Horizon: Ligurian.

1874. Heer. MSS.
1874. Oustalet. Ann. sc. géol., v, art. 2: 163–166. *Pl.* 2, *figs.* 10, 12.

4960. Staphylinus (Ocypus) provincialis. (Staphylinidæ.)

Locality: Aix, France. Horizon: Ligurian.

1874. Oustalet. Ann. sc. géol., v, art. 2: 159–160. *Pl.* 3, *fig.* 2.

4961. Statira (vic.) ——. (Lagriidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1868. Smith. Quart. journ. sc., v: 184. *Pl.*, *fig.* 7.

4962. Stenus ——. (Staphylinidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1845. Berendt. Bernst. befindl. organ. reste vorw., i: 56.

4963. Stenus ——. (Staphylinidæ.)

Locality: Hösbach, Bavaria. Horizon: Lower Pleistocene.

1884. Flach. Käfer unterpleist. Hösbach, 9.
1884. " Verhandl. physik.-med. gesellsch. Würzb., n. f., xviii: 293.

4964. Stenus ——. (Staphylinidæ.)

Compared with S. juno.

Locality: Hösbach, Bavaria. Horizon: Lower Pleistocene.

1884. Flach. Käfer unterpleist. Hösbach, 9. *Pl.* 2, *fig.* 4.
1884. " Verhandl. physik.-med. gesellsch. Würzb., n. f., xviii: 293. *Pl.* 9, *fig.* 4.

4965. Stenus ——. (Staphylinidæ.

Locality: Brunstatt, Alsatia. Horizon: Middle Oligocene.

1888. Foerster. Mitth. comm. geol. Elsass-Lothr., i: 165.
1889. " Mitth. comm. geol. Elsass-Lothr., ii: 103.

4966. Stenus ——. (Staphylinidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1856. Monge. Progr. petrischule Danzig, 1856: 23.

4967. Stenus gypsi. (Staphylinidæ.)

Locality: Aix, France. Horizon: Ligurian.

1874. Oustalet. Ann. sc. géol., v, art. 2: 139–140. *Pl.* 2, *fig.* 5.

4968. Stenus prodromus. (Staphylinidæ.)
Locality: Aix, France. Horizon: Ligurian.
1856. Heer. Viert. naturf. gesellsch. Zürich, i: 14–15. *Pl.* 1, *fig.* 8.
1874. Oustalet. Ann. sc. géol., v, art. 2: 138–139. *Pl.* 6, *figs.* 16, 16a.

4969. Stenus scribai. (Staphylinidæ.)
Locality: Rott, Rhenish Prussia. Horizon: Aquitanian.
1866. Heyd.-Heyd. Palaeontogr., xv: 137. *Pl.* 22, *fig.* 13.
1866. Käfer u. polypen, 7. *Pl.* 1, *fig.* 13.

Steropus æthiops. See Feronia (Steropus) æthiops.

4970. Stilicus ——. (Staphylinidæ.)
Locality: Prussian amber. Horizon: Ligurian.
1845. Berendt. Bernst. befindl. organ. reste vorw., i: 56.

4971. Stomis elegans. (Carabidæ.)
Locality: Aix, France. Horizon: Ligurian.
1874. Oustalet. Ann. sc. géol., v, art. 2: 115–116. *Pl.* 1, *fig.* 3.

4972. Strongylus? ——. (Nitidulidæ.)
Locality: Prussian amber. Horizon: Ligurian.
1845. Berendt. Bernst. befindl. organ. reste vorw., i: 56.

4973. Strophosomus? (or Cucorhinus?) ——. (Otiorhynchidæ.)
Locality: Peckham, England. Horizon: Paludina beds, Lower Eocene.
1861. Smith. Geologist, iv: 40.

4974. Sunius demersus. (Staphylinidæ.)
Locality: Rott, Rhenish Prussia. Horizon: Aquitanian.
1866. Heyd.-Heyd. Palaeontogr., xv: 137. *Pl.* 22, *fig.* 12.
1866. " Käfer u. polypen, 7. *Pl.* 1, *fig.* 12.

Sybines melancholicus. See Sibynes melancholicus.

4975. Sylvanus? ——. (Cucujidæ.)
Locality: Prussian amber. Horizon: Ligurian.
1845. Berendt. Bernst. befindl. organ. reste vorw., i: 56.

4976. Tachinus ——. (Staphylinidæ.)
Locality: Prussian amber. Horizon: Ligurian.
1845. Berendt. Bernst. befindl. organ. reste vorw., i: 56.

4977. Tachinus ——. (Staphylinidæ.)
Locality: Prussian amber. Horizon: Ligurian.
1856. Menge. Progr. petrischule Danzig, 1856: 23.

4978. Tachyporus ——. (Staphylinidæ.)
Locality: Prussian amber. Horizon: Ligurian.
1845. Berendt. Bernst. befindl. organ. reste vorw., i: 56.

4979. Tachyporus ——. (Staphylinidæ.)

Locality: Prussian amber. **Horizon:** Ligurian.

1856. Menge. Progr. petrischule Danzig, 1856: 23.

4980. Tachyporus sepultus. (Staphylinidæ.)

Locality: Rott, Rhenish Prussia. **Horizon:** Aquitanian.

1866. Heyd.-Heyd. Palaeontogr., xv: 136. *Pl.* 22, *fig.* 10.
1866. " Käfer u. polypen, 6. *Pl.* 1, *fig.* 10.

4981. Tagenopsis brevicornis. (Tenebrionidæ.)

Locality: Oeningen, Baden. **Horizon:** Tortonian.

1865. Heer. Urwelt der Schweiz, 377. *Figs.* 257, 257*b* on *p.* 376.
1872. " Monde prim. Suisse, 462. *Figs.* 257, 257*b* on *p.* 461.
1876. " Prim. world Switz., ii: 33. *Figs.* 257, 257*b* on *p.* 32.
1879. " Urwelt der Schweiz, 2ᵉ aufl., 402. *Figs.* 299, 299*b*.
1885. Scudder. Zittel, Handb. palaeont., i, th. ii: 791. *Fig.* 1018.
1886. " Zittel-Barrois, Traité de paléont., ii: 792. *Fig.* 1036.

4982. Tanymecus seculorum. (Otiorhynchidæ.)

Locality: Green River, Wyo. **Horizon:** Oligocene.

1890. Scudder. Tert. ins. N. A., 475–476. *Pl.* 8, *fig.* 22.

4983. Tanysphyrus deletus. (Curculionidæ.)

Locality: Aix, France. **Horizon:** Ligurian.

1874. Oustalet. Ann. sc. géol., v, art. 2: 268–269. *Pl.* 5, *fig.* 7.

4984. Telephorus atavinus. (Lampyridæ.)

Locality: Radoboj, Croatia. **Horizon:** Mayencian.

1847. Heer. Insektenf. tertiärg. Oeningen, i: 149–150 (attavinus). *Pl.* 4, *fig.* 15.
1852. Giebel. Deutschl. petref., 650.
1856. " Insect. d. vorwelt, 102.

Telephorus attavinus. See Telephorus **atavinus.**

4985. Telephorus brodiei. (Lampyridæ.)

Locality: Rott, Rhenish Prussia. **Horizon:** Aquitanian.

1866. Heyd.-Heyd. Palaeontogr., xv: 143. *Pl.* 22, *fig.* 25.
1866. " Käfer u. polypen, 13. *Pl.* 1, *fig.* 25.

4986. Telephorus caducus. (Lampyridæ.)

Locality: Rott, Rhenish Prussia. **Horizon:** Aquitanian.

1866. Heyd.-Heyd. Palaeontogr., xv: 143. *Pl.* 22, *fig.* 20.
1866. " Käfer u. polypen, 13. *Pl.* 1, *fig.* 20.

4987. Telephorus carbonarius. (Lampyridæ.)

Locality: Rott, Rhenish Prussia. **Horizon:** Aquitanian.

1866. Heyd.-Heyd. Palaeontogr., xv: 142. *Pl.* 23, *fig.* 2.
1866. " Käfer u. polypen, 12. *Pl.* 2, *fig.* 2.

4968. Stenus prodromus. (Staphylinidæ.)

Locality: Aix, France. Horizon: Ligurian.

1856. Heer. Viert. naturf. gesellsch. Zürich, i: 14-15. *Pl.* 1, *fig.* 8.
1874. Oustalet. Ann. sc. géol., v, art. 2: 138-139. *Pl.* 6, *figs.* 16, 16a.

4969. Stenus scribai. (Staphylinidæ.)

Locality: Rott, Rhenish Prussia. Horrizon: Aquitanian.

1866. Heyd.-Heyd. Palaeontogr., xv: 137. *Pl.* 22, *fig.* 13.
1866. Käfer u. polypen, 7. *Pl.* 1, *fig.* 13.

Steropus æthiops. See Feronia (Steropus) æthiops.

4970. Stilicus ——. (Staphylinidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1845. Berendt. Bernst. befindl. organ. reste vorw., i: 56.

4971. Stomis elegans. (Carabidæ.)

Locality: Aix, France. Horizon: Ligurian.

1874. Oustalet. Ann. sc. géol., v, art. 2: 115-116. *Pl.* 1, *fig.* 3.

4972. Strongylus? ——. (Nitidulidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1845. Berendt. Bernst. befindl. organ. reste vorw., i: 56.

4973. Strophosomus? (or Cucorhinus?) ——. (Otiorhynchidæ.)

Locality: Peckham, England. Horizon: Paludina beds, Lower Eocene.

1861. Smith. Geologist, iv: 40.

4974. Sunius demersus. (Staphylinidæ.)

Locality: Rott, Rhenish Prussia. Horizon: Aquitanian.

1866. Heyd.-Heyd. Palaeontogr., xv: 137. *Pl.* 22, *fig.* 12.
1866. " Käfer u. polypen, 7. *Pl.* 1, *fig.* 12.

Sybines melancholicus. See Sibynes melancholicus.

4975. Sylvanus? ——. (Cucujidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1845. Berendt. Bernst. befindl. organ. reste vorw., i: 56.

4976. Tachinus ——. (Staphylinidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1845. Berendt. Bernst. befindl. organ. reste vorw., i: 56.

4977. Tachinus ——. (Staphylinidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1856. Menge. Progr. petrischule Danzig, 1856: 23.

4978. Tachyporus ——. (Staphylinidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1845. Berendt. Bernst. befindl. organ. reste vorw., i: 56.

4979. Tachyporus ———. (Staphylinidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1856.	Menge.	Progr. petrischule Danzig, 1856: 23.

4980. Tachyporus sepultus. (Staphylinidæ.)

Locality: Rott, Rhenish Prussia. Horizon: Aquitanian.

1866.	Heyd.-Heyd.	Palaeontogr., xv: 136. *Pl.* 22, *fig.* 10.
1866.	"	Käfer u. polypen, 6. *Pl.* 1, *fig.* 10.

4981. Tagenopsis brevicornis. (Tenebrionidæ.)

Locality: Oeningen, Baden. Horizon: Tortonian.

1865.	Heer.	Urwelt der Schweiz, 377. *Figs.* 257, 257*b* on *p.* 376.
1872.	"	Monde prim. Suisse, 462. *Figs.* 257, 257*b* on *p.* 461.
1876.	"	Prim. world Switz., ii: 33. *Figs.* 257, 257*b* on *p.* 32.
1879.	"	Urwelt der Schweiz, 2ᵉ aufl., 402. *Figs.* 299, 299*b*.
1885.	Scudder.	Zittel, Handb. palaeont., i, th. ii: 791. *Fig.* 1018.
1886.	"	Zittel-Barrois, Traité de paléont., ii: 792. *Fig.* 1036.

4982. Tanymecus seculorum. (Otiorhynchidæ.)

Locality: Green River, Wyo. Horizon: Oligocene.

1890.	Scudder.	Tert. ins. N. A., 475–476. *Pl.* 8, *fig.* 22.

4983. Tanysphyrus deletus. (Curculionidæ.)

Locality: Aix, France. Horizon: Ligurian.

1874.	Oustalet.	Ann. sc. géol., v, art. 2: 268–269. *Pl.* 5, *fig.* 7.

4984. Telephorus atavinus. (Lampyridæ.)

Locality: Radoboj, Croatia. Horizon: Mayencian.

1847.	Heer.	Insektenf. tertiärg. Oeningen, i: 149–150 (attavinus). *Pl.* 4, *fig.* 15.
1852.	Giebel.	Deutschl. petref., 650.
1856.	"	Insect. d. vorwelt, 102.

Telephorus attavinus. See Telephorus **atavinus.**

4985. Telephorus brodiei. (Lampyridæ.)

Locality: Rott, Rhenish Prussia. Horizon: Aquitanian.

1866.	Heyd.-Heyd.	Palaeontogr., xv: 143. *Pl.* 22, *fig.* 25.
1866.	"	Käfer u. polypen, 13. *Pl.* 1, *fig.* 25.

4986. Telephorus caducus. (Lampyridæ.)

Locality: Rott, Rhenish Prussia. Horizon: Aquitanian.

1866.	Heyd.-Heyd.	Palaeontogr., xv: 143. *Pl.* 22, *fig.* 20.
1866.	"	Käfer u. polypen, 13. *Pl.* 1, *fig.* 20.

4987. Telephorus carbonarius. (Lampyridæ.)

Locality: Rott, Rhenish Prussia. Horizon: Aquitanian.

1866.	Heyd.-Heyd.	Palaeontogr., xv: 142. *Pl.* 23, *fig.* 2.
1866.	"	Käfer u. polypen, 12. *Pl.* 2, *fig.* 2.

4988. Telephorus exauctaratus. (Lampyridæ.)

Locality: Rott, Rhenish Prussia. Horizon: Aquitanian.

1866.	Heyd.-Heyd.	Palaeontogr., xv: 142–143. *Pl.* 23, *fig.* 3.
1866.	"	Käfer u. polypen, 12–13. *Pl.* 2, *fig.* 3.
1870.	L. Heyden.	Foss. dipt. Rott, 29.
1870.	"	Palaeontogr., xvii: 265.

4989. Telephorus fragilis. (Lampyridæ.)

Locality: Oeningen, Baden. Horizon: Tortonian.

1847.	Heer.	Insektenf. tertiärg. Oeningen, i: 148–149. *Pl.* 4, *fig.* 14.
1852.	Giebel.	Deutschl. petref., 650.
1856.	"	Insect. d. vorwelt, 102.

4990. Telephorus germari. (Lampyridæ.)

Locality: Oeningen, Baden. Horizon: Tortonian.

1847.	Heer.	Insektenf. tertiärg. Oeningen, i: 143–145. *Pl.* 4, *fig.* 10.
1852.	Giebel.	Deutschl. petref., 650.
1856.	"	Insect. d. vorwelt, 101.

4991. Telephorus macilentus. (Lampyridæ.)

Locality: Oeningen, Baden. Horizon: Tortonian.

1865.	Heer.	Urwelt der Schweiz. *Fig.* 256 on *p.* 376.
1872.	"	Monde prim. Suisse. *Figs.* 256, 256*b–d* on *p.* 461.
1876.	"	Prim. world Switz., ii. *Fig.* 256 on *p.* 32.
1879.	"	Urwelt der Schweiz, 2e aufl. *Fig.* 298 on *p.* 402.

Telephorus œningensis. See Telephorus tertiarius œningensis.

Telephorus radobojanus. See Telephorus tertiarius radobojanus.

4992. Telephorus tertiarius. (Lampyridæ.)

Localities: Oeningen, Baden; Radoboj, Croatia. Horizons: Tortonian, Mayencian

1847.	Heer.	Insektenf. tertiärg. Oeningen, i: 145. *Pl.* 4, *figs.* 11–13.
1852.	Giebel.	Deutschl. petref., 650.
1856.	"	Insect. d. vorwelt, 101–102.

See also Telephorus tertiarius œningensis, T. tertiarius radobojanus.

4993. Telephorus tertiarius œningensis. (Lampyridæ.)

Locality: Oeningen, Baden. Horizon: Tortonian.

1847.	Heer.	Insektenf. tertiärg. Oeningen, i: 145–146. *Pl.* 4, *fig.* 11.

See also Telephorus tertiarius, etc.

4994. Telephorus tertiarius radobojanus. (Lampyridæ.)

Locality: Radoboj, Croatia. Horizon: Mayencian.

1847.	Heer.	Insektenf. tertiärg. Oeningen, i: 147–148. *Pl.* 4, *fig.* 12.

See also Telephorus tertiarius, etc.

4995. Tenebrio effossus. (Tenebrionidæ.)

Compared with T. molitor.

Locality: Vicinity Bonn, Rhenish Prussia. Horizon: Aquitanian?

1837.	Germar.	Fauna insect. Europæ, xix: 8. *Pl.* 8.
1856.	Giebel.	Insect. d. vorwelt, 109–110.

4996. Tenebrio primigenius. (Tenebrionidæ)

Compared with T. molitor Linn.

Locality: Nine Mile Creek, British Columbia. **Horizon:** ——.

1879. Scudder. Rep. progr. geol. surv. Can., 1877–'78: B183.
1879. " Insect. tert. Nicola, 8.
1890. " Tert. ins. N. A., 483–484. *Pl.* 2, *fig.* 32.

4997. Tenebrio senex. (Tenebrionidæ.)

Locality: Rott, Rhenish Prussia. **Horizon:** Aquitanian.

1859. Heyden. Palaeontogr., viii: 7–8. *Pl.* 1, *fig.* 6.

4998. Throscus ——. (Throscidæ.)

Locality: Prussian amber. **Horizon:** Ligurian.

1845. Berendt. Bernst. befindl. organ. reste vorw., i: 56.

4999. Thylacites ——. (Otiorhynchidæ.)

Locality: Prussian amber. **Horizon:** Ligurian.

1832. Burmeister. Handb. ent., i: 635.
1836. " Man. ent., 577.

5000. Thylacites rugosus. (Otiorhynchidæ.)

Compared with T. guinardi, T. araneiformis.

Locality: Kutschlin, Bohemia. **Horizon:** Miocene.

1881. Deichmüller. Foss. ins. diatomeensch. Kutschlin, 19–21. *Pl.* 21, *figs.* 6, 6*a*.
1881. " Verhandl. leop.-carol. akad. naturf., xlii: 311–313. *Pl.* 21, *figs.* 6, 6*a*.
1885. Scudder. Zittle, Handb. palaeont., i, th. ii: 789. *Fig.* 1009.
1886. " Zittle-Barrois, Traité de paléont., ii: 789. *Fig.* 1027.

5001. Tillus ——. (Cleridæ.)

Locality: Prussian amber. **Horizon:** Ligurian.

1856. Berendt. Bernst. befindl. organ. reste vorw., i: 56.

5002. Timarcha ——. (Chrysomelidæ.)

Locality: Norfolk, England. **Horizon:** Forest bed, Pleistocene.

1888. Bell. Entom., xxi: 2.

5003. Timarcha metallica (recent). (Chrysomelidæ.)

Locality: Hösbach, Bavaria. **Horizon:** Lower Pleistocene.

[1781. Laichart. Verz. tyrol. ins., 144.]
1884. Flach. Käfer unterpleist. Hösbach, 10. *Pl.* 2, *fig.* 10.
1884. " Verhandl. physik.-med. gesellsch. Würzb., n. f., xviii: 294. *Pl.* 9, *fig.* 10.

5004. Tmesiphoroides cariniger. (Pselaphidæ.)

Locality: Prussian amber. **Horizon:** Ligurian.

1856. Motschulsky. Étud. entom., v: 26. *Pl.*, *figs.* 5, 5′, 5″.
1885. Scudder. Zittel, Handb. palaeont., i, th. ii: 802. *Fig.* 1059.
1886. " Zittel-Barrois, Traité de paléont., ii: 802. *Fig.* 1076.

5005. Tophoderes depontanus. (Anthribidæ.)

Locality: Rott, Rhenish Prussia. Horizon: Aquitanian.

1859. Heyden. Palaeontogr., viii: 9–10. *Pl.* 1, *fig.* 2.
1885. Scudder. Zittel, Handb. palaeont., i, th. ii: 787. *Fig.* 1005.
1886. " Zittel-Barrois, Traité de paléont., ii: 787. *Fig.* 1022.

5006. Trachyderes bustiraptus. (Cerambycidæ.)

Locality: Sieblos, Rhenish Prussia. Horizon: Aquitanian.

1859. Heyden. Palaeontogr., viii: 15–16. *Pl.* 3, *fig.* 7.
See also Trachyderes bustonaptus.

5007. Trachyderes bustonaptus. (Cerambycidæ.)

Locality: Sieblos, Rhenish Prussia. Horizon: Aquitanian.

1860. Heyden. Hassenc., Würzb. naturw. zeitschr., i: 79 (undescr.).
See also Trachyderes bustiraptus.

5008. Trechinites clairvillii. (Carabidæ.)

Locality: Oeningen, Baden. Horizon: Tortonian.

1862. Heer. Verhandl. holl. maatsch. wetensch. Haarl., xvi: 34. *Pl.* 1, *fig.* 25.

5009. Trechinites oblongus. (Carabidæ.)

Locality: Oeningen, Baden. Horizon: Tortonian.

1862. Heer. Verhandl. holl. maatsch. wetensch. Haarl., xvi: 34. *Pl.* 1, *fig.* 26.

5010. Trechoides fasciatus. (Carabidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1856. Motschulsky. Étud. entom., v: 26.

5011. Trechus ———. (Carabidæ.)

Locality: Brunstatt, Alsatia. Horizon: Middle Oligocene.

1890. Foerster. In litt.

5012. Trechus rivularis (recent). (Carabidæ.)

Locality: Hösbach, Bavaria. Horizon: Lower Pleistocene.

[1810. Gyllenhal. Ins. suec., ii: 32.]
1884. Flach. Käfer unterpleist. Hösbach, 7. *Pl.* 1, *fig.* 11.
1884. " Verhandl. physik.-med. gesellsch. Würzb., n. f., xviii: 291. *Pl.* 8, *fig.* 11.

5013. Triæna tertiaria. (Stylopidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1866. Menge. Rhipidopteron (Schrift. naturf. gesellsch. Danzig, (2), i, iii–iv): 2–3. *Figs.* 1–3.
1885. Scudder. Zittel, Handb. palaeont., i, th. ii: 790. *Fig.* 1012.
1886. " Zittel-Barrois, Traité de paléont., ii: 790. *Fig.* 1030.
See also Mengea tertiaria.

5014. **Trichius ——.** (Scarabæidæ.)

Locality: Caverne de Lunel Vieil, dép. de l'Hérault, France.
Horizon: Postpliocene.

1827. Serres. Mém. soc. linn. Paris, v: 457.

5015. **Trichius ædilis.** (Scarabæidæ.)

Compared with T. nobilis L.

Locality: Oeningen, Baden. Horizon: Tortonian.

1865. Heer. Urwelt der Schweiz, 380. *Fig.* 226 on *p.* 378.
1872. " Monde prim. Suisse, 466. *Fig.* 226 on *p.* 463.
1876. " Prim. world Switz., ii: 36. *Fig.* 226 on *p.* 34.
1879. " Urwelt der Schweiz, 2ᵉ aufl., 405. *Fig.* 308 on *p.* 404.
See also Trichius (Gnorimus) ædilis.

5016. **Trichius (Gnorimus) ædilis.** (Scarabæidæ.)

Locality: Oeningen, Baden. Horizon: Tortonian.

1862. Heer. Verhandl. holl. maatsch. wetensch. Haarl., xvi: 81–82. *Pl.* 6, *figs.* 14, 15.
See also Trichius ædilis.

5017. **Trichius amœnus.** (Scarabæidæ.)

Campared with T. fasciatus F.

Locality: (Oeningen ?, Baden.) Horizon: Tortonian.

1847. Heer. Insektenf. tertiärg. Oeningen, i: 74–75. *Pl.* 7, *fig.* 53.
1852. Giebel. Deutschl. petref., 652.
1856. " Insect. d. vorwelt, 30.
1865. Heer. Urwelt der Schweiz, 380.
1872. " Monde prim. Suisse, 466.
1876. " Prim. world Switz., ii: 36.
1879. " Urwelt der Schweiz, 2ᵉ aufl., 405.

5018. **Trichius lugubris.** (Scarabæidæ.)

Compared with T. variabilis L.

Locality: Oeningen, Baden. Horizon: Tortonian.

1865. Heer. Urwelt der Schweiz, 380.
1872. " Monde prim. Suisse, 466.
1876. " Prim. world Switz., ii: 36.
1879. " Urwelt der Schweiz, 2ᵉ aufl., 405.
See also Trichius (Gnorimus) lugubris.

5019. **Trichius (Gnorimus) lugubris.** (Scarabæidæ.)

Locality: Oeningen, Baden. Horizon: Tortonian.

1862. Heer. Verhandl. holl. maatsch. wetensch. Haarl., xvi: 81. *Pl.* 6, *fig.* 13.
See also Trichius lugubris.

5020. **Trichius rotundatus.** (Scarabæidæ.)

Locality: Oeningen, Baden. Horizon: Tortonian.

1862. Heer. Verhandl. holl. maatsch. wetensch. Haarl., xvi: 82. *Pl.* 6, *fig.* 18.

5021. Trichius unifasciatus. (Scarabæidæ.)

Locality: Oeningen, Baden. Horizon: Tortonian.

1862. Heer. Verhandl. holl. maatsch. wetensch. Haarl., xvi: 82. *Pl.* 6, *figs.* 16, 17.

5022. Triphyllus heerii. (Mycetophagidæ.)

Locality: Aix, France. Horizon: Ligurian.

1874. Oustalet. Ann. sc. géol., v, art. 2: 189–190. *Pl.* 6, *fig.* 13.
1885. Scudder. Zittel, Handb. palaeont., i, th. ii: 799. *Fig.* 1049.
1886. " Zittel-Barrois, Traité de paléont., ii: 800. *Fig.* 1066.

5023. Trogosita ——. (Trogositidæ.)

Compared with T. cœrulea.

Locality: Aix, France. Horizon: Ligurian.

1829. Serres. Géogn. terrains tert., 225.

5024. Trogosita amissa. (Trogositidæ.)

Locality: Oeningen, Baden. Horizon: Tortonian.

1862. Heer. Verhandl. holl. maatsch. wetensch. Haarl., xvi: 55. *Pl.* 3, *figs.* 13, 14.

5025. Trogosita assimilis. (Trogositidæ.)

Compared with T. mauritanica L.

Locality: Oeningen, Baden. Horizon: Tortonian.

1862. Heer. Verhandl. holl. maatsch. wetensch. Haarl., xvi: 56. *Pl.* 3, *figs.* 12, 12*bc.*
1865. " Urwelt der Schweiz, 382.
1872. " Monde prim. Suisse, 469.
1876. " Prim. world Switz., ii: 39.
1879. " Urwelt der Schweiz, 2^{e} aufl. 406.

5026. Trogosita bella. (Trogositidæ.)

Locality: Oeningen, Baden. Horizon: Tortonian.

1862. Heer. Verhandl. holl. maatsch. wetensch. Haarl., xvi: 55. *Pl.* 3, *figs.* 15, 15*b*.

5027. Trogosita emortua. (Trogositidæ.)

Locality: Orsberg, (Rhenish Prussia?). Horizon: Miocene.

1849. Germar. Zeitschr. deutsch. geol. gesellsch., i: 60–61. *Pl.* 2, *fig.* 4.
1852. Giebel. Deutschl. petref., 654.
1856. " Insect. d. vorwelt, 42.

5028. Trogosita insignis. (Trogositidæ.)

Compared with T. caraboides.

Locality: Atanekerdluk, North Greenland. Horizon: Miocene.

1868. Heer. Flora foss. arct., 129. *Pl.* 50, *figs.* 12, 12*bc.*
1883. " Flora foss. groenl., ii: 144.

5029. Trogosita kœllikeri. (Trogositidæ.)

Locality: (Oeningen, Baden.) Horizon: Tortonian.

1847. Heer. Insektenf. tertiärg. Oeningen, i: 40–43. *Pl.* 6, *fig.* 3.
1852. Giebel. Deutschl. petref., 654.
1856. " Insect. d. vorwelt, 42.
1862. Heer. Verhandl. holl. maatsch. wetensch. Haarl., xvi: 54.

5030. **Trogosita longicollis.** (Trogositidæ.)

Locality: Oeningen, Baden. Horizon: Tortonian.

1862. Heer. Verhandl. holl. maatsch. wetensch. Haarl., xvi: 54–55. *Pl.* 3, *figs.* 10, 10*b*.

5031. **Trogosita sculpturata.** (Trogositidæ.)

Locality: Oeningen, Baden. Horizon: Tortonian.

1862. Heer. Verhandl. holl. maatsch. wetensch. Haarl., xvi: 53–54. *Pl.* 3, *fig.* 9.
1865. " Urwelt der Schweiz, 382. *Fig.* 277 on *p.* 381.
1872. " Monde prim. Suisse, 468. *Fig.* 277 on *p.* 467.
1876. " Prim. world Switz., ii: 39. *Fig.* 277 on *p.* 38.
1879. " Urwelt der Schweiz, 2ᵉ aufl., 408. *Fig.* 319 on *p.* 407.

5032. **Trogosita tenebrioides.** (Trogositidæ.)

Compared with T. cærulea.

Locality: Vicinity Bonn, Rhenish Prussia. Horizon: Aquitanian?.

1837. Germar. Fauna insect. Europæ, xix: 9. *Pl.* 9.
1852. Giebel. Deutschl. petref., 654.
1856. " Insect. d. vorwelt, 42.

5033. **Tropisternus saxialis.** (Hydrophilidæ.)

Compared with T. binotatus Walk., Mexico.

Locality: Green River, Wyo. Horizon: Oligocene.

1878. Scudder. Bull. U. S. geol. surv. terr., iv: 759–760.
1890. " Tert. ins. N. A., 515. *Pl.* 8, *fig.* 2.

5034. **Tropisternus sculptilis.** (Hydrophilidæ.)

Compared with T. mexicanus Castln.

Locality: Green River, Wyo. Horizon: Oligocene.

1878. Scudder. Bull. U. S. geol. surv. terr., iv: 760.
1890. " Tert. ins. N. A., 514–515.

5035. **Trox oustaleti.** (Scarabæidæ.)

Locality: Nine Mile Creek, British Columbia. Horizon: ——.

1879. Scudder. Rep. progr. geol. surv. Can., 1877–'78: B 179–180.
1879. " Insect. tert. Nicola, 4–5.
1890. " Tert. ins. N. A., 487. *Pl.* 2, *fig.* 22.

5036. **Trypodendron impressum.** (Scolytidæ.)

Compared with T. retusum.

Locality: Green River, Wyo. Horizon: Oligocene.

1876. Scudder. Bull. U. S. geol. surv. terr., ii: 83 (impressus).
See also Dryocætes impressus.

5037. **Tychius ——.** (Curculionidæ.)

Locality: Brunstatt, Alsatia. Horizon: Middle Oligocene.

1890. Foerster. In litt.

5038. Tychius manderstjernai. (Curculionidæ.)

Compared with T. sparsutus Oliv.

Locality: Rott, Rhenish Prussia. **Horizon:** Aquitanian.

1866. Heyd.-Heyd. Palaeontogr., xv: 152. *Pl.* 24, *fig.* 5.
1866. " Käfer u. polypen, 22. *Pl.* 3, *fig.* 5.

5039. Uloma avia. (Tenebrionidæ.)

Locality: Rott, Rhenish Prussia. **Horizon:** Aquitanian.

1862. Heyden. Palaeontogr., x: 70. *Pl.* 10, *fig.* 7.

5040. Urodon ———. (Bruchidæ.)

Locality: Brunstatt, Alsatia. **Horizon:** Middle Oligocene.

1890. Foerster. In litt.

5041. Urodon priscus. (Bruchidæ.)

Locality: Rott, Rhenish Prussia. **Horizon:** Aquitanian.

1862. Heyden. Palaeontogr., x: 70. *Pl.* 10, *fig.* 17.

5042. Valgus œningensis. (Scarabæidæ.)

Compared with V. hemipterus (L.).

Locality: Oeningen, Baden. **Horizon:** Tortonian.

1862. Heer. Verhandl. holl. maatsch. wetensch. Haarl., xvi: 82–83. *Pl.* 6, *figs.* 12*a–aa*.
1865. " Urwelt der Schweiz, 380. *Fig.* 265 on *p.* 378.
1872. " Monde prim. Suisse, 466. *Fig.* 265 on *p.* 463.
1876. " Prim. world Switz., ii: 36. *Fig.* 265 on *p.* 34.
1879. " Urwelt der Schweiz, 2^e aufl., 405–406. *Fig.* 307 on *p.* 404.

5043. Xantholinus westwoodianus. (Staphylinidæ.)

Locality: Aix, France. **Horizon:** Ligurian.

1856. Heer. Viert. naturf. gesellsch. Zürich, i: 16–17. *Pl.* 1, *fig.* 6.
1874. Oustalet. Ann. sc. géol., v, art. 2: 151–152. *Pl.* 2, *fig.* 6.
See also Lathrobium ——— Curtis, etc.

5044. Xyletinites tumbicolus. (Ptinidæ.)

Locality: Rott, Rhenish Prussia. **Horizon:** Aquitanian.

1866. Heyd.-Heyd. Palaeontogr., xv: 144 (tumbicola). *Pl.* 22, *fig.* 21.
1866. " Käfer u. polypen, 14. *Pl.* 1, *fig.* 21.

Zonites vetusta. See Zonitis vetusta.

5045. Zonitis vetusta. (Meloidæ.)

Compared with Z. præusta, Southern Europe.

Locality: Oeningen, Baden. **Horizon:** Tortonian.

1865. Heer. Urwelt der Schweiz, 376 (Zonites).
1872. " Monde prim. Suisse, 462.
1876. " Prim. world Switz., ii: 33.
1879. " Urwelt der Schweiz, 2^e aufl., 402.

DIPTERA.

5046. ——— ———.

Locality: (Sinigaglia ?, Italy.) Horizon: ———.

1841. Bassi. Atti reun. scienz. ital., iii: 401.

5047. ——— ———.

Locality: Radoboj, Croatia. Horizon: Mayencian.

1831. Boué. Journ. géol., iii: 105, 143. *Pl.* 2, *fig.* 1.

5048. ——— ———.

Locality: Nantucket amber. Horizon: ———.

1879. Goldsmith. Proc. acad. nat. sc. Philad., 1879: 207.

5049. ——— ———.

Locality: Wilhelmsfund, Nassau. Horizon: "Braunkohl."

1856. Heyden. Palaeontogr., iv: 201. *Pl.* 37, *fig.* 8.

5050. ——— ———.

Locality: Sinigaglia, Italy. Horizon: Helvetian ?.

1842. Procaccini. Nuov. ann. sc. nat., vii: 449.

5051. ——— ———.

Localities: Bodensee u. Rheine, Germany. Horizon: Alluvium.

1851. Stizenberg. Uebers. verstein. Baden, 119.

5052. ——— ———.

Locality: Gurnet Bay, Isle of Wight. Horizon: Bembridge Limestone.

1879. Woodward. Quart. journ. geol. soc. Lond., xxxv: 344.

5053. ——— ———. (Anthomyidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1850. Loew. Bernstein fauna, 43.

5054. ——— ———. (Asilidæ.)

Locality: British Columbia. Horizon: ———.

1879. Scudder. Rep. progr. geol. surv. Can., 1877–'78: B 186.
1879. " Ins. tert. beds Nicola, 11.
1890. " Tert. ins. N. A., 565.

5055. ——— ——— (several). (Asilidæ.)

Locality: Florissant, Colo. Horizon: Oligocene

1881. Scudder. Bull. U. S. geol. surv. terr., vi: 291.
1883. " Ann. rep. U. S. geol. surv. terr., xii: 281.
1890. " Tert. ins. N. A., 29.

5056. ——— ———. (Asilidæ.)

Locality: Italy ?. Horizon: ———.

1796. ———. Ittiol. veron., i: 31.

5057. ——— ———. (Bibionidæ.)

Locality: Aix, France. Horizon: Ligurian.

1829. Curtis. Edinb. new phil. journ., vii: 296. *Pl.* 6, *fig.* 10.
1829. " Murchison-Lyell, Tert. form. Aix, 12. *Pl.* 6, *fig.* 10.
See also Protomyia elegans.

5058. ——— ———. (Bibionidæ.)

Locality: Corent, France. Horizon: Aquitanian.

1870. Oustalet. Ann. sc. géol., ii, art. 3: 152, 1er spec.

5059. ——— ———. (Bibionidæ.)

Locality: Corent, France. Horizon: Aquitanian.

1870. Oustalet. Ann. sc. géol., ii, art. 3: 153, 2e spec.

5060. ——— ———. (Bibionidæ.)

Locality: Authezat, France. Horizon: Aquitanian.
1870. Oustalet. Ann. sc. géol., ii, art. 3: 153, 3e spec. *Pl.* 4, *fig.* 11.

5061. ——— ———. (Bibionidæ.)

Locality: Corent, France. Horizon: Aquitanian.

1870. Oustalet Ann. sc. géol., ii, art. 3: 153, 4e spec. *Pl.* 3, *fig.* 17.

5062. ——— ——— (several). (Bibionidæ.)

Locality: Florissant, Colo. Horizon: Oligocene.

1881. Scudder. Bull. U. S. geol. surv. terr., vi: 291.
1883. " Ann. rep. U. S. geol. surv. terr. xii: 281
1890. " Tert. ins. N. A., 28–29.

5063. ——— ——— (several). (Bombylidæ.)

Locality: Florissant, Colo. Horizon: Oligocene.

1881. Scudder. Bull. U. S. geol. surv. terr., vi: 291.
1883. " Ann. rep. U. S. geol. surv. terr., xii: 281.
1890. " Tert. ins. N. A., 29.

5064. ——— ———. (Chironomidæ.)

Locality: Quesnel, British Columbia. Horizon: ———.

1877. Scudder. Rep. geol. surv. Can., 1875–'76: 270–271.
1877. " Ins. tert. Quesnel, 5–6.
1877. " Rapp. opér. comm. géol. Can., 1875–'76: 299.

5065. ——— ———. (Chironomidæ.)

Locality: White River, Colo. Horizon: Oligocene.

1877. Scudder. Bull. U. S. geol. surv. terr., iii: 745, lines 25–29.
1890. " Tert. ins. N. A., 581. *Pl.* 5, *fig.* 32, 33.

5066. ——— ———. (Chironomidæ.)

Locality: White River, Colo. Horizon: Oligocene.

1877. Scudder. Bull. U. S. geol. surv. terr., iii: 745, lines 30–33.
1890. " Tert. ins. N. A., 581. *Pl.* 5, *fig.* 24.

5067. ——— ———. (Chironomidæ?.)

Locality: White River, Utah. Horizon: Oligocene.

1877. Scudder. Bull. U. S. geol. surv. terr., iii: 745, lines 34–41.
1890. " Tert. ins. N. A., 581.

5068. ——— ———. (Chironomidæ.)

Locality: Florissant, Colo. Horizon: Oligocene.

1881. Scudder. Bull. U. S. geol. surv. terr., vi: 291.
1883. " Ann. rep. U. S. geol. surv. terr., xii: 280.
1890. " Tert. ins. N. A., 28.

5069. ——— ———. (Conopidæ-Myopina.)

Locality: Prussian amber. Horizon: Ligurian.

1850. Loew. Bernstein fauna, 43.

5070. ——— ———. (Culicidæ.)

Locality: Florissant, Colo. Horizon: Oligocene.

1881. Scudder. Bull. U. S. geol. surv. terr., vi: 291.
1883. " Ann. rep. U. S. geol. surv. terr., xii: 280.
1890. " Tert. ins. N. A., 28.

5071. ——— ———. (Culicidæ.)

Locality: Gurnet Bay, Isle of Wight. Horizon: Bembridge Limestone.

1879. Woodward. Geol. mag., n. s., v: 88.

5072. ——— ——— (several). (Hermoneuridæ.)

Locality: Florissant, Colo. Horizon: Oligocene.

1881. Scudder. Bull. U. S. geol. surv. terr., vi: 291.
1883. " Ann. rep. U. S. geol. surv. terr., xii: 281.
1890. " Tert. ins. N. A., 29.

5073. ——— ——— (several). (Midasidæ.)

Locality: Florissant, Colo. Horizon: Oligocene.

1881. Scudder. Bull. U. S. geol. surv. terr., vi: 291.
1883. " Ann. rep. U. S. geol. surv. terr., xii: 281.
1890. " Tert. ins. N. A., 29.

5074. ——— ———. (Muscidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1835. Gravenhorst. Uebers. schles. gesellsch. vaterl. cult., 1834: 92.

5075. ——— ———. (Muscidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1850. Loew. Bernsteinfauna, 43.

5076. ——— ———. (Muscidæ.)

Locality: Green River, Wyo. Horizon: Oligocene.

1870. Scudder. Hayden, Sun pictures, 98.

5077. ——— ——— (many). (Muscidæ.)

Locality: Florissant, Colo. Horizon: Oligocene.

1881. Scudder. Bull. U. S. geol. surv. terr., vi: 291.
1883. " Ann. rep. U. S. geol. surv. terr., xii: 281.
1890. " Tert. ins. N. A., 29.

5078. ——— ———. (Mycetophilidæ.)

Locality: Sicilian amber. Horizon: ———.

1838. Guérin. Rev. zool., 1838: 170 (Dipt. or Hymen.). *Pl.* 1, *fig.* 17.
1840. Rondani. Rev. zool., 1840: 369 (Dipt.).
1840. Guérin. Rev. zool., 1840: 370.

5079. ——— ——— (mine). (Mycetophilidæ.)

Locality: Rott, Rhenish Prussia. Horizon: Aquitanian.

1862. Heyden. Palaeontogr., x: 81 (in Polyporus foliatus Ludw.). *Pl.* 10, *fig.* 3.

5080. ——— ——— (3 sp.). (Mycetophilidæ.)

Locality: Green River, Wyo. Horizon: Oligocene.

1878. Scudder. Bull. U. S. geol. surv. terr., iv: 750–751.
1890. " Tert. ins. N. A., 599. *Pl.* 10, *fig.* 12.

5081. ——— ———. (Mycetophilidæ.)

Locality: Florissant, Colo. Horizon: Oligocene.

1881. Scudder. Bull. U. S. geol. surv. terr., vi: 291.
1883. " Ann. rep. U. S. geol. surv. terr., xii: 281.
1890. " Tert. ins. N. A., 28.

——— ——— (Myopina). See ——— ——— (Conopidæ-Myopina).

5082. ——— ——— (several). (Ortalidæ).

Locality: Florissant, Colo. Horizon: Oligocene.

1881. Scudder. Bull. U. S. geol. surv. terr., vi: 291.
1883. " Ann. rep. U. S. geol. surv. terr., xii: 281.
1890. " Tert. ins. N. A., 29.

5083. ——— ——— (several). (Stratiomyidæ.)

Locality: Florissant, Colo. Horizon: Oligocene.

1881. Scudder. Bull. U. S. geol. surv. terr., vi: 291.
1883. " Ann. rep. U. S. geol. surv. terr., xii: 281.
1890. " Tert. ins. N. A., 29.

5084. ——— ———. (Syrphidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1850. Loew. Bernsteinfauna, 42–43.

5085. ——— ———. (Syrphidæ.)

Locality: Green River, Wyo. Horizon: Oligocene.

1870. Scudder. Hayden, Sun pictures, 98.
See also Milesia quadrata.

5086. ——— ——— (several). (Syrphidæ.)

Locality: Florissant, Colo. Horizon: Oligocene.

1881. Scudder. Bull. U. S. geol. surv. terr., vi: 291.
1883. " Ann. rep. U. S. geol. surv. terr., xii: 281.
1890. " Tert. ins. N. A., 29.

5087. ——— ———. (Syrphidæ.)

Locality: Green River, Wyo. Horizon: Oligocene.

1890. Scudder. Tert. ins. N. A., 562. *Pl.* 10, *fig.* 9.

5088. ——— ———. (Tabanidæ.)

Locality: Grone, Italy. Horizon: Quaternary.

1881. Malfatti. Atti soc. ital. sc. nat., xxiv, 90.
1881. " Bibl. ins. foss. ital., 2.

5089. ——— ——— (several). (Therevidæ.)

Locality: Florissant, Colo. Horizon: Oligocene.

1881. Scudder. Bull. U. S. geol. surv. terr., vi: 291.
1883. " Ann. rep. U. S. geol. surv. terr., xii: 281.
1890. " Tert. ins. N. A., 29.

5090. ——— ———. (Tipulidæ.)

Locality: Radoboj, Croatia. Horizon: Mayencian.

1831. Boué. Journ. géol., iii: 105, 143. *Pl.* 2, *fig.* 3.

5091. ——— ———. (Tipulidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1835. Gravenhorst. Uebers. schles. gesellsch. vaterl. cult., 1834: 92.

5092. ——— ——— (several). (Tipulidæ.)

Locality: Florissant, Colo. Horizon: Oligocene.

1881. Scudder. Bull. U. S. geol. surv. terr., vi: 291.
1883. " Ann. Rep. U. S. geol. surv. terr., xii: 281.
1890. " Tert. ins. N. A., 28.

5093. ——— ———. (Tipulidæ.)

Locality: Gurnet Bay, Isle of Wight. Horizon: Bembridge Limestone.

1879. Woodward. Quart. journ. geol. soc. Lond., xxxv: 344.
1879. " Geol. mag. (n. s.), v: 88.

5094. Aclada ———. (Mycetophilidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1850. Loew. Bernsteinfauna, 35 (undescr.).
1856. Giebel. Insect. d. vorwelt, 238.

5095. Acrocera hirsuta. (Cyrtidæ.)

Locality: White River, Utah. Horizon: Oligocene.

1877. Scudder. Bull. U. S. geol. surv. terr., iii: 755.
1890. " Tert. ins. N. A., 563. *Pl.* 5, *fig.* 5.

5096. Adetus ———. (Tipulidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1845. Berendt. Bernst. befindl. organ. reste vorw., i: 57.

5097. Æmoaipus bornensis. (Tabanidæ.)

Locality: Le Pny, France. Horizon: ———.

1854. Aymard. Congr. scient. France, sess. 22: 42 (undescr.).

5098. Agromyza ———. (Agromyzidæ.)

Locality: Schossnitz, Silesia. Horizon: Miocene.

1855. Goeppert. Tert. flora Schossnitz, vii (mine on Ulmus pyramidalis). *Pl.* 26, *fig.* 52.

5099. Agromyza protogæa. (Agromyzidæ.)

Locality: Radoboj, Croatia. Horizon: Mayencian.

1849. Heer. Insektenf. tertiärg. Oeningen, ii: 253–254. *Pl.* 17, *fig.* 22.
1852. Giebel. Deutschl. petref., 643.
1856. " Insect. d. vorwelt, 196–197.

5100. Allarithmia palpata. (Tipulidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1850. Loew. Bernsteinfauna, 38 (undescr.).
1856. Giebel. Insect. d. vorwelt, 247.
See also Eriocera palpata.

5101. Anaclinia? ———. (Mycetophilidæ.)

Locality: Green River, Wyo. Horizon: Oligocene.

1890. Scudder. Tert. ins. N. A., 597. *Pl.* 9, *fig.* 12.
See also Gnoriste (vic.) ——— Scudder.

5102. Anatella tacita. (Mycetophilidæ.)

Locality: Green River, Wyo. Horizon: Oligocene.

1890. Scudder. Tert. ins. N. A., 589. *Pl.* 10, *fig.* 13.

5103. Anisomera ———. (Tipulidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1845. Berendt. Bernst. befindl. organ. reste vorw., i: 57.

5104. Anisomera succini. (Tipulidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1850. Loew. Bernsteinfauna, 37 (undescr.).
1856. Giebel. Insect. d. vorwelt, 244.
See also Eriocera succini.

5105. Anisopus ———. (Tipulidæ.)

Compared with A. fuscus.

Locality: Aix, France. Horizon: Ligurian.

1829. Serres. Géogn. terrains tert., 231.

5106. Anthomyia ———. (Anthomyidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1831. Burmeister. Oken, Isis, 1831: 1100.
1832. " Handb. ent., i: 636.
1836. " Man. ent., 578.

5107. **Anthomyia** ———. (Anthomyidæ.)

Locality: Brunstatt, Alsatia. **Horizon**: Middle Oligocene.

1890.	Foerster.	In litt.

5108. **Anthomyia atavina.** (Anthomyidæ.)

Locality: Radoboj, Croatia. **Horizon**: Mayencian.

1849.	Heer.	Insektenf. tertiärg. Oeningen, ii: 248–249. *Pl.* 17, *fig.* 18.
1852.	Giebel.	Deutschl. petref., 643.
1856.	"	Insect. d. vorwelt, 197 (attavina).

Anthomyia attavina. See **Anthomyia atavina.**

5109. **Anthomyia burgessi.** (Anthomyidæ.)

Locality: Quesnel, British Columbia. **Horizon**: ———.

1877.	Scudder.	Rep. geol. surv. Can., 1875–'76: 274–275.
1877.	"	Ins. tert. Quesnel, 9–10.
1877.	"	Rapp. opér. comm. géol. Can., 1875–'76: 303–304.
1890.	"	Tert. ins. N. A., 549–550. *Pl.* 3, *fig.* 34.

5110. **Anthomyia heymanni.** (Anthomyidæ.)

Locality: Rott, Rhenish Prussia. **Horizon**: Aquitanian.

1870.	L. Heyden.	Foss. dipt. Rott, 27–28. *Pl.* 2, *fig.* 30.
1870.	"	Palaeontogr., xvii: 263–264. *Pl.* 45, *fig.* 30.

5111. **Anthomyia inanimata.** (Anthomyidæ.)

Locality: Quesnel, British Columbia. **Horizon**: ———.

1877.	Scudder.	Rep. geol. surv. Can., 1875–'76: 273–274.
1877.	"	Ins. tert. Quesnel, 8–9.
1877.	"	Rapp. opér. comm. géol. Can., 1875–'76: 302–303.
1890.	"	Tert. ins. N. A., 548–549. *Pl.* 3, *fig.* 19.

5112. **Anthomyia latipennis.** (Anthomyidæ.)

Locality: Radoboj, Croatia. **Horizon**: Mayencian.

1849.	Heer.	Insektenf. tertiärg. Oeningen, ii: 249. *Pl.* 17, *fig.* 19.
1852.	Giebel.	Deutschl. petref., 643.
1856.	"	Insect. d. vorwelt, 197.

5113. **Anthomyia morio.** (Anthomyidæ.)

Locality: Radoboj, Croatia. **Horizon**: Mayencian.

1849.	Heer.	Insektenf. tertiärg. Oeningen, ii: 249–250. *Pl.* 17, *fig.* 20.
1852.	Giebel.	Deutschl. petref., 643.
1856.	"	Insect. d. vorwelt, 197.

5114. **Anthracida xylotona.** (Bombylidæ.)

Locality: Orsberg, (Rhenish Prussia ?) **Horizon**: Miocene.

1849.	Germar.	Zeitschr. deutsch. geol. gesellsch., i: 64–65. *Pl.* 2, *figs.* 7, 7*a*.
1856.	Giebel.	Insect. d. vorwelt, 213–214.
1885.	Scudder.	Zittel, Handb. palaeont., i, th. ii: 808. *Figs.* 1075*ab*.
1886.	"	Zittel-Barrois, Traité de paléont., ii: 809. *Figs.* 1092*ab*.
1886.	"	Bull. U. S. geol. surv., No. 31: 87

5115. Anthrax ———. (Bombylidæ.)

Compared with A. semiatra.

Locality: Prussian amber. Horizon: Ligurian.

1832. Burmeister. Handb. ent., i: 636.
1836. " Man. ent., 578.

5116. Anthrax ———. (Bombylidæ.)

Locality: Rhine, Germany. Horizon: Aquitanian ?.

1831. Goldfuss. Verhandl. leop.-carol. deutschl. akad. naturf., vii, i: 118.

5117. Anthrax ———. (Bombylidæ.)

Locality: Oeningen, Baden. Horizon: Tortonian.

1834. Keferstein. Naturg. erdkörp., ii: 337.

5118. Apedilia ———. (Chironomidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1850. Loew. Bernsteinfauna, 30.

5119. Aphritis ———. (Syrphidæ.)

Compared with A. auro-pubescens.

Locality: Aix, France. Horizon: Ligurian.

1829. Serres. Géogn. terrains tert., 233.
See also Microdon ——— Burm.

5120. Arthropeas nana. (Acanthomeridæ.)

Compared with A. sibirica.

Locality: Prussian amber. Horizon: Ligurian.

1850. Loew. Bernsteinfauna, 40 (undescr.).
1856. Giebel. Insect. d. vorwelt, 214.
1861. Loew. Dipt. fauna bernsteins, 7.
1864. " Dipt. amber, 9.

5121. Asarcomyia cadaver. (Stratiomyidæ.)

Locality: Green River, Wyo. Horizon: Oligocene.

1890. Scudder. Tert. ins. N. A., 567-568. *Pl.* 9, *fig.* 17.

5122. Asilus ———. (Asilidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1845. Berendt. Bernst. befindl. organ. reste vorw., i: 57.

5123. Asilus ———. (Asilidæ.)

Locality: Rott, Rhenish Prussia. Horizon: Aquitanian.

1870. L. Heyden. Foss. dipt. Rott, 23, No. 1.
1870. " Palaeontogr., xvii: 259.

5124. Asilus ———. (Asilidæ.)

Locality: Aix, France. Horizon: Ligurian.

1829. Serres. Géogn. terrains tert., 232.

5125. Asilus angustifrons. (Asilidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1850. Loew. Bernsteinfauna, 40 (undescr.).
1856. Giebel. Insect. d. vorwelt, 212.

5126. Asilus antiquus. (Asilidæ.)

Locality: Oeningen, Baden. Horizon: Tortonian.

1849. Heer. Insektenf. tertiärg. Oeningen, ii: 239–240. *Pl.* 17, *fig.* 7.
1852. Giebel. Deutschl. petref., 642.
1856. " Insect. d. vorwelt, 211–212.

5127. Asilus bicolor. (Asilidæ.)

Locality: Radoboj, Croatia. Horizon: Mayencian.

1849. Heer. Insektenf. tertiärg. Oeningen, ii: 241. *Pl.* 17, *fig.* 9.
1852. Giebel. Deutschl. petref., 642.
1856. " Insect. d. vorwelt, 212.

5128. Asilus deperditus. (Asilidæ.)

Locality: Oeningen, Baden. Horizon: Mayencian.

1849. Heer. Insektenf. tertiärg. Oeningen, ii: 240. *Pl.* 17, *fig.* 8.
1852. Giebel. Deutschl. petref., 642.
1856. " Insect. d. vorwelt, 212.

5129. Asilus trichurus. (Asilidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1850. Loew. Bernsteinfauna, 40 (undescr.).
1856. Giebel. Insect. d. vorwelt, 212.

5130. Asynapta ——— (3 sp.). (Cecidomyidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1850. Loew. Bernsteinfauna, 32.

5131. Ataracta ——— (8 sp.). (Tipulidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1850. Loew. Bernsteinfauna, 36, 38.

5132. Atherix ———. (Leptidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1845. Berendt. Bernst. befindl. organ. reste vorw., i: 57.
1850. Loew. Bernsteinfauna, 40 (4 sp.).

5133. Beris ———. (Stratiomyidæ.)

Locality: ———. Horizon: ———.

1846. Giebel. Paläozool., 277.

5134. Bibio ———. (Bibionidæ.)

Locality: Aix, France. Horizon: Ligurian.

1837. Buckland. Geology and mineral., ii: 78–79. *Pl.* 46″, *fig.* 11.
1838. " Géologie, ed. Agassiz, ii: expl. pl. 46″, pp. 5–6. *Pl.* 46″, *fig.* 11.
See also Protomyia bucklandi, etc.

5115. Anthrax ——. (Bombylidæ.)
Compared with A. semiatra.
Locality: Prussian amber. Horizon: Ligurian.
1832. Burmeister. Handb. ent., i: 636.
1836. " Man. ent., 578.

5116. Anthrax ——. (Bombylidæ.)
Locality: Rhine, Germany. Horizon: Aquitanian ?.
1831. Goldfuss. Verhandl. leop.-carol. deutschl. akad. naturf., vii, i: 118.

5117. Anthrax ——. (Bombylidæ.)
Locality: Oeningen, Baden. Horizon: Tortonian.
1834. Keferstein. Naturg. erdkörp., ii: 337.

5118. Apedilia ——. (Chironomidæ.)
Locality: Prussian amber. Horizon: Ligurian.
1850. Loew. Bernsteinfauna, 30.

5119. Aphritis ——. (Syrphidæ.)
Compared with A. auro-pubescens.
Locality: Aix, France. Horizon: Ligurian.
1829. Serres. Géogn. terrains tert., 233.
See also Microdon —— Burm.

5120. Arthropeas nana. (Acanthomeridæ.)
Compared with A. sibirica.
Locality: Prussian amber. Horizon: Ligurian.
1850. Loew. Bernsteinfauna, 40 (undescr.).
1856. Giebel. Insect. d. vorwelt, 214.
1861. Loew. Dipt. fauna bernsteins, 7.
1864. " Dipt. amber, 9.

5121. Asarcomyia cadaver. (Stratiomyidæ.)
Locality: Green River, Wyo. Horizon: Oligocene.
1890. Scudder. Tert. ins. N. A., 567-568. *Pl.* 9, *fig.* 17.

5122. Asilus ——. (Asilidæ.)
Locality: Prussian amber. Horizon: Ligurian.
1845. Berendt. Bernst. befindl. organ. reste vorw., i: 57.

5123. Asilus ——. (Asilidæ.)
Locality: Rott, Rhenish Prussia. Horizon: Aquitanian.
1870. L. Heyden. Foss. dipt. Rott, 23, No. 1.
1870. " Palaeontogr., xvii: 259.

5124. Asilus ——. (Asilidæ.)
Locality: Aix, France. Horizon: Ligurian.
1829. Serres. Géogn. terrains tert., 232.

5125. Asilus angustifrons. (Asilidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1850. Loew. Bernsteinfauna, 40 (undescr.).
1856. Giebel. Insect. d. vorwelt, 212.

5126. Asilus antiquus. (Asilidæ.)

Locality: Oeningen, Baden. Horizon: Tortonian.

1849. Heer. Insektenf. tertiärg. Oeningen, ii: 239–240. *Pl.* 17, *fig.* 7.
1852. Giebel. Deutschl. petref., 642.
1856. " Insect. d. vorwelt, 211–212.

5127. Asilus bicolor. (Asilidæ.)

Locality: Radoboj, Croatia. Horizon: Mayencian.

1849. Heer. Insektenf. tertiärg. Oeningen, ii: 241. *Pl.* 17, *fig.* 9.
1852. Giebel. Deutschl. petref., 642.
1856. " Insect. d. vorwelt, 212.

5128. Asilus deperditus. (Asilidæ.)

Locality: Oeningen, Baden. Horizon: Mayencian.

1849. Heer. Insektenf. tertiärg. Oeningen, ii: 240. *Pl.* 17, *fig.* 8.
1852. Giebel. Deutschl. petref., 642.
1856. " Insect. d. vorwelt, 212.

5129. Asilus trichurus. (Asilidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1850. Loew. Bernsteinfauna, 40 (undescr.).
1856. Giebel. Insect. d. vorwelt, 212.

5130. Asynapta ——— (3 sp.). (Cecidomyidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1850. Loew. Bernsteinfauna, 32.

5131. Ataracta ——— (8 sp.). (Tipulidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1850. Loew. Bernsteinfauna, 36, 38.

5132. Atherix ———. (Leptidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1845. Berendt. Bernst. befindl. organ. reste vorw., i: 57.
1850. Loew. Bernsteinfauna, 40 (4 sp.).

5133. Beris ———. (Stratiomyidæ.)

Locality: ———. Horizon: ———.

1846. Giebel. Paläozool., 277.

5134. Bibio ———. (Bibionidæ.)

Locality: Aix, France. Horizon: Ligurian.

1837. Buckland. Geology and mineral., ii: 78–79. *Pl.* 46″, *fig.* 11.
1838. " Géologie, ed. Agassiz, ii: expl. pl. 46″, pp. 5–6. *Pl.* 46″, *fig.* 11.
See also Protomyia bucklandi, etc.

5135. Bibio ? ——. (Bibionidæ.)

Locality: Prussian amber. **Horizon:** Ligurian.

1832. **Burmeister.** Handb. ent., i: 637.

1836. " Man. ent., 578.

5136. Bibio —— (several). (Bibionidæ.)

Locality: Aix, France. **Horizon:** Ligurian.

1832. **Burmeister.** Handb. ent., i: 639.

1836. " Man. ent., 580.

See also Hirtea —— Serres (3 sp.).

5137. Bibio ——. (Bibionidæ.)

Locality: Gabbro, Italy. **Horizon:** Tripoli earth.

1878. **Capellini.** Atti accad. linc., (3), mem. sc. fis., ii: 285.

5138. Bibio ——. (Bibionidæ.)

Compared with B. venosus Meig.

Locality: Aix, France. **Horizon:** Ligurian.

1829. **Curtis.** Edinb. new phil. journ., vii: 296.

1829. " Murchison-Lyell, Tert. form. Aix, 12.

5139. Bibio —— (2 or 3 sp.). (Bibionidæ.)

Locality: Brunstatt, Alsatia. **Horizon:** Middle Oligocene.

1888. **Foerster.** Mitth. comm. geol. Elsass-Lothr., i: 164.

1889. " Mitth. comm. geol. Elsass-Lothr., ii: 103.

5140. Bibio ——. (Bibionidæ.)

Locality: Prussian amber. **Horizon:** Ligurian.

1742. **Sendel.** Historia succin., 44 (unnamed). *Pl.* 1, *fig.* 18.

1825. **Guérin.** Dict. class. d'hist. nat., viii: 580 (Bibion).

1829. **Serres.** Géogn. terrains tert., 242.

5141. Bibio alacris. (Bibionidæ.)

Locality: Corent, France. **Horizon:** Aquitanian.

1870. **Oustalet.** Ann. sc. géol., ii, art. 3: 127–128. *Pl.* 3, *fig.* 15.

5142. Bibio angustatus. (Bibionidæ.)

Locality: Oeningen, Baden. **Horizon:** Tortonian.

1849. **Heer.** Insektenf. tertiärg. Oeningen, ii: 215–216. *Pl.* 16, *fig.* 4.

1852. **Giebel.** Deutschl. petref., 641.

1856. " Insect. d. vorwelt, 217.

5143. Bibio antiquus. (Bibionidæ.)

Locality: Wilhelmsfund, Nassau. **Horizon:** "Braunkohl."

1856. **Heyden.** Palaeontogr., iv: 201. *Pl.* 37, *fig.* 7.

5144. Bibio brevis. (Bibionidæ.)

Locality: Oeningen, Baden. **Horizon:** Mayencian.

1849. **Heer.** Insektenf. tertiärg. Oeningen, ii: 225–226. *Pl.* 16, *fig.* 16.

1852. **Giebel.** Deutschl. petref., 641.

1856. " Insect. d. vorwelt, 220–221.

5145. Bibio curtisii. (Bibionidæ.)

Locality: Aix, France. Horizon: Ligurian.

1829. Curtis. Edinb. new. phil. journ., vii: 296 (unnamed). *Pl.* 6, *fig.* 12.
1829. " Murchison-Lyell, Tert. form. Aix, 12 (unnamed). *Pl.* 6, *fig.* 12.
1856. Heer. Viert. naturf. gesellsch. Zürich, i: 34–35. *Pl.* 2, *figs.* 7, 14.

5146. Bibio cylindratus. (Bibionidæ.)

Locality: Corent, France. Horizon: Aquitanian.

1870. Oustalet. Ann. sc. géol., ii, art. 3: 133, 134. *Pl.* 4, *fig.* 12.

5147. Bibio deletus. (Bibionidæ.)

Locality: Rott, Rhenish Prussia. Horizon: Aquitanian.

1859. Heyden. Palaeontogr., viii: 14. *Pl.* 2, *fig.* 13.
1865. Heyd.-Heyd. Palaeontogr., xiv: 29–30.

5148. Bibio dubius. (Bibionidæ.)

Locality: Vicinity Bonn, Rhenish Prussia. Horizon: Aquitanian.

1856. Giebel. Insect. d. vorwelt, 221–222.
See also Phthiria dubia.

5149. Bibio edwardsii. (Bibionidæ.)

Locality: Corent, France. Horizon: Aquitanian.

1870. Oustalet. Ann. sc. géol., ii, art. 3: 130–133. *Pl.* 5, *figs.* 1–11.
1874. " La Nature, iii: 35. *Fig.* on *p.* 33.
See also Plecia edwardsii.

5150. Bibio elegantulus. (Bibionidæ.)

Locality: Krottensee, Bohemia. Horizon: Aquitanian.

1877. Novák. Sitzungsb. k. akad. wiss. Wien, lxxvi: 85–86. *Pl.* 1, *fig.* 5.
1877. " Fauna egerer tertiärb., 15–16. *Pl.* 1, *fig.* 5.

5151. Bibio elongatus. (Bibionidæ.)

Locality: Oeningen, Baden. Horizon: Tortonian.

1849. Heer. Insektenf. tertiärg. Oeningen, ii: 214. *Pl.* 16, *fig.* 2.
1852. Giebel. Deutschl. petref., 641.
1856. " Insect. d. vorwelt, 216.
1865. Heer. Urwelt der Schweiz, 396. *Fig.* 311 on *p.* 394.
1872. " Monde prim. Suisse, 485. *Fig.* 311 on *p.* 484.
1876. " Prim. world Switz., ii: 55. *Fig.* 311 on *p.* 54.
1879. " Urwelt der Schweiz, 2e aufl., 421. *Fig.* 353 on *p.* 420.

5152. Bibio enterodelus. (Bibionidæ.)

Locality: Radoboj, Croatia. Horizon: Mayencian.

1841. Unger. Verhandl. leop.-carol. deutschl. akad. naturf., xix: 428. *Pl.* 72, *fig.* 7.
1841. " Foss. insecten, 16. *Pl.* 72, *fig.* 7.
1849. Heer. Insektenf. tertiärg. Oeningen, ii: 222–223. *Pl.* 16, *fig.* 14.
1850. " Neue denkschr. schweiz. gesellsch. wiss., xi: 222–223. *Pl.* 16, *fig.* 14.
1852. Giebel. Deutschl. petref., 641.
1856. " Insect. d. vorwelt, 220.

5153. Bibio firmus. (Bibionidæ.)

Locality: Radoboj, Croatia. **Horizon:** Mayencian.

1849.	Heer.	Insektenf. tertiärg. Oeningen, ii: 226–227. *Pl.* 16, *fig.* 17.
1852.	Giebel.	Deutschl. petref., 641.
1856.	“	Insect. d. vorwelt, 221.

5154. Bibio formosus. (Bibionidæ.)

Locality: Krottensee, Bohemia. **Horizon:** Aquitanian.

1877.	Novák.	Sitzungsb. k. akad. wiss. Wien, lxxvi: 85. *Pl.* 1, *fig.* 4.
1877.	“	Fauna egerer tertiärb., 15. *Pl.* 1, *fig.* 4.

5155. Bibio fusiformis. (Bibionidæ.)

Localities: Oeningen, Baden; Aix, France; Tállya, Hungary.
Horizons: Mayencian, Ligurian.

1849.	Heer.	Insektenf. tertiärg. Oeningen, ii: 219. *Pl.* 16, *fig.* 9.
1852.	Giebel.	Deutschl. petref., 641.
1856.	“	Insect. d. vorwelt, 218–219.
1856.	Heer.	Viert. naturf. gesellsch. Zürich, i: 33.
1872.	“	Mitth. jahrb. ung. geol. anst., ii, i: 8.

5156. Bibio giganteus. (Bibionidæ.)

Locality: Radoboj, Croatia. **Horizon:** Mayencian.

1841.	Unger.	Verhandl. leop.-carol. deutschl. akad. naturf., xix: 427. *Pl.* 72, *fig.* 6.
1841.	“	Foss. insect., 15. *Pl.* 72, *fig.* 6.
1849.	Heer.	Insektenf. tertiärg. Oeningen, ii: 212–213. *Pl.* 16, *fig.* 1.
1852.	Giebel.	Deutschl. petref., 641.
1856.	“	Insect. d. vorwelt, 216.

5157. Bibio gigas. (Bibionidæ.)

Locality: Corent, France. **Horizon:** Aquitanian.

1870.	Oustalet.	Ann. sc. géol., ii, art. 3: 122–123. *Pl.* 1, *figs.* 2–4.

5158. Bibio gracilis. (Bibionidæ.)

Locality: Radoboj, Croatia. **Horizon:** Mayencian.

1841.	Unger.	Verhandl. leop.-carol. deutschl. akad. naturf., xix: 426. *Pl.* 72, *fig.* 4.
1841.	“	Foss. insect., 14. *Pl.* 72, *fig.* 4.
1849.	Heer.	Insektenf. tertiärg. Oeningen, ii: 217–218. *Pl.* 16, *fig.* 7.
1850.	“	Neue denkschr. schweiz. gesellsch. wiss., xi: 217–218. *Pl.* 16, *fig.* 7.
1852.	Giebel.	Deutschl. petref., 641.
1856.	“	Insect. d. vorwelt, 218.

See also Bibio gracilis minor.

5159. Bibio gracilis minor. (Bibionidæ.)

Locality: Corent, France. **Horizon:** Aquitanian.

1870.	Oustalet.	Ann. sc. géol., ii, art. 3: 134–135. *Pl.* 3, *fig.* 16.

See also Bibio gracilis.

5160. **Bibio incrassatus.** (Bibionidæ.)

Locality: Radoboj, Croatia. Horizon: Mayencian.

1849.	Heer.	Insektenf. tertiärg. Oeningen, ii: 221–222. *Pl.* 16, *fig.* 12.
1852.	Giebel.	Deutschl. petref., 641.
1856.	"	Insect. d. vorwelt, 219.

5161. **Bibio janus.** (Bibionidæ.)

Locality: Rott, Rhenish Prussia. Horizon: Aquitanian.

1870.	L. Heyden.	Foss. dipt. Rott, 21–22. *Pl.* 2, *fig.* 25.
1870.	"	Palaeontogr., xvii: 257–258. *Pl.* 45, *fig.* 25.

5162. **Bibio kochii.** (Bibionidæ.)

Locality: Felek, near Klausenburg, Transylvania. Horizon: ———.

1883.	Staub.	Mitth. jahrb. k. ung. geol. anst., vi: 280–281. *Pl.* 18, *fig.* 13.

5163. **Bibio lartetii.** (Bibionidæ.)

Locality: Corent, France. Horizon: Aquitanian.

1870.	Oustalet.	Ann. sc. géol., ii, art. 3: 137–138. *Pl.* 4, *fig.* 10, 14.

See also Plecia larteti.

5164. **Bibio lignarius.** (Bibionidæ.)

Compared with B. marci.

Localities: Rott, Rhenish Prussia; Radoboj, Croatia. Horizons: Aquitanian, Mayencian.

1837.	Germar.	Fauna insect. Europæ, xix: 23. *Pl.* 23.
1841.	Unger.	Verhandl. leop.-carol. deutschl. akad. naturf., xix: 427. *Pl.* 72, *figs.* 5*ab*.
1841.	"	Foss. insect., 15. *Pl.* 72, *figs.* 5*ab*.
1852.	Giebel.	Deutschl. petref., 641.
1856.	"	Insect. d. vorwelt, 218.
1859.	Heyden.	Palaeontogr., viii: 14. *Pl.* 1, *fig.* 4.

Heer considers Unger's figures distinct and to belong to two species, referring one to his Bibio ungeri, the other to Protomyia lygæoides.

See also Protomyia lignaria, Bibio ungeri, Protomyia lygæoides, Plecia lygæoides.

5165. **Bibio linearis.** (Bibionidæ.)

Locality: Radoboj, Croatia. Horizon: Mayencian.

1849.	Heer.	Insektenf. tertiärg. Oeningen, ii: 214–215. *Pl.* 16, *fig.* 3.
1852.	Giebel.	Deutschl. petref., 641.
1853–'56.	Bronn.	Lethæa geogn., 3^{e} aufl., iii: 640. *Pl.* 42′, *fig.* 11*c*.
1856.	Giebel.	Insect. d. vorwelt, 217.

5166. **Bibio lividus.** (Bibionidæ.)

Locality: Radoboj, Croatia. Horizon: Mayencian.

1849.	Heer.	Insektenf. tertiärg. Oeningen, ii: 223–224. *Pl.* 15, *figs.* 23*b*, *d*.
1852.	Giebel.	Deutschl. petref., 641.
1856.	"	Insect. d. vorwelt, 220.

5167. **Bibio macer.** (Bibionidæ.)

Locality: Corent, France. Horizon: Aquitanian.

1870.	Oustalet.	Ann. sc. géol., ii, art. 3: 126–127. *Pl.* 4, *fig.* 6.

5168. Bibio maculatus. (Bibionidæ.)

Locality: Radoboj, Croatia. Horizon: Mayencian.

1849. Heer. Insektenf. tertiärg. Oeningen, ii: 219–220. *Pl.* 16, *fig.* 10.
1852. Giebel. Deutschl. petref., 641.
1856. " Insect. d. vorwelt, 219.

Bibio marginatus. See Bibio ungeri marginatus.

5169. Bibio martinsi. (Bibionidæ.)

Locality: Aix, France. Horizon: Ligurian.

1861. Heer. Saporta, Heer, rech. climat pays tert., 153 (undescr.).

5170. Bibio mimas. (Bibionidæ.)

Locality: Rott, Rhenish Prussia. Horizon: Aquitanian.

1870. L. Heyden. Foss. dipt. Rott, 22. *Pl.* 2, *fig.* 26.
1870. " Palaeontogr., xvii: 258. *Pl.* 45, *fig.* 26.

Bibio minor. See Bibio gracilis minor.

5171. Bibio mœstus. (Bibionidæ.)

Compared with B. pomonæ L.

Localities: Oeningen, Baden; Aix, France. Horizons: Mayencian, Ligurian.

1849. Heer. Insektenf. tertiärg. Oeningen, ii: 224–225. *Pl.* 16, *fig.* 15.
1852. Giebel. Deutschl. petref., 641.
1856. " Insect. d. vorwelt, 220.
1856. Heer. Viert. naturf. gesellsch. Zürich, i: 33–34.
1865. " Urwelt der Schweiz, 396.
1872. " Monde prim. Suisse, 485.
1876. " Prim. world Switz, ii: 55.
1879. " Urwelt der Schweiz, 2^{e} aufl., 421.

5172. Bibio morio. (Bibionidæ.)

Localities: Radoboj, Croatia; Aix, France. Horizons: Mayencian, Ligurian.

1849. Heer. Insektenf. tertiärg. Oeningen, ii: 222. *Pl.* 16, *fig.* 13.
1852. Giebel. Deutschl. petref., 641.
1856. " Insect. d. vorwelt, 219–220.
1856. Heer. Viert. naturf. gesellsch. Zürich, i: 33.

5173. Bibio murchisonis. (Bibionidæ.)

Locality: Radoboj, Croatia. Horizon: Mayencian.

1841. Unger. Verhandl. leop.-carol. deutschl. akad. naturf., xix: 426. *Pl.* 71, *fig.* 3.
1841. " Foss. insect., 14. *Pl.* 71, *fig.* 3.

See also Bibiopsis murchisonii, etc.

5174. Bibio oblongus. (Bibionidæ.)

Locality: Oeningen, Baden. Horizon: Tortonian.

1849. Heer. Insektenf. tertiärg. Oeningen, ii: 227. *Pl.* 16, *fig.* 18.
1852. Giebel. Deutschl. petref., 641.
1856. " Insect. d. vorwelt, 221.

5175. Bibio obsoletus. (Bibionidæ.)

Localities: Oeningen, Baden; Corent, France. Horizons: Tortonian, Aquitanian.

1849. Heer. Insektenf. tertiärg. Oeningen. ii: 227–228. *Pl.* 16, *fig.* 19.
1852. Giebel. Deutschl. petref., 641.
1856. " Insect. d. vorwelt, 221.
1870. Oustalet. Ann. sc. géol., ii, art. 3: 136. *Pl.* 4, *fig.* 13.

Bibio œningensis. See Bibio pinguis œningensis.

5176. Bibio pannosus. (Bibionidæ.)

Compared with B. lividus Heer.

Locality: Rott, Rhenish Prussia. Horizon: Aquitanian.

1865. Heyd.-Heyd. Palaeontogr., xiv: 20. *Pl.* 8, *fig.* 1.
See also Bibio tertiarius.

5177. Bibio partschii. (Bibionidæ.)

Locality: Radoboj, Croatia. Horizon: Mayencian.

1849. Heer. Insektenf. tertiärg. Oeningen, ii: 216. *Pl.* 16, *fig.* 5.
1852. Giebel. Deutschl. petref., 641.
1856. " Insect. d. vorwelt, 217.

5178. Bibio pinguis. (Bibionidæ.)

Localities: Oeningen, Baden; Radoboj, Croatia. Horizons: Tortonian, Mayencian.

1849. Heer. Insektenf. tertiärg. Oeningen, ii: 220–221. *Pl.* 16, *figs.* 11*a–c*.
1852. Giebel. Deutschl. petref., 641.
1856. " Insect. d. vorwelt, 219.
See also Bibio pinguis œningensis, B. pinguis radobojanus.

5179. Bibio pinguis œningensis. (Bibionidæ.)

Locality: Oeningen, Baden. Horizon: Tortonian.

1849. Heer. Insektenf. tertiärg. Oeningen, ii: 221. *Pl.* 16, *fig.* 11*b*.
See also Bibio pinguis, etc.

5180. Bibio pinguis radobojanus. (Bibionidæ.)

Locality: Radoboj, Croatia. Horizon: Mayencian.

1849. Heer. Insektenf. tertiärg. Oeningen, ii: 220–221. *Pl.* 16, *fig.* 11*a*.
See also Bibio pinguis, etc.

5181. Bibio pulchellus. (Bibionidæ.)

Locality: Oeningen, Baden. Horizon: Tortonian.

1849. Heer. Insektenf. tertiärg. Oeningen, ii: 217. *Pl.* 16, *fig.* 6.
1852. Giebel. Deutschl. petref., 641.
1856. " Insect. d. vorwelt, 217.

Bibio radobojanus. See Bibio pinguis radobojanus.

5182. Bibio robustus. (Bibionidæ.)

Localities: Corent, Anthezat, France. Horizon: Aquitanian.

1870. Oustalet. Ann. sc. géol., ii, art. 3: 128–129. *Pl.* 4, *figs.* 7–9.

5168. Bibio maculatus. (Bibionidæ.)

Locality: Radoboj, Croatia. Horizon: Mayencian.

1849.	Heer.	Insektenf. tertiärg. Oeningen, ii: 219–220. *Pl.* 16, *fig.* 10.
1852.	Giebel.	Deutschl. petref., 641.
1856.	"	Insect. d. vorwelt, 219.

Bibio marginatus. See Bibio ungeri marginatus.

5169. Bibio martinsi. (Bibionidæ.)

Locality: Aix, France. Horizon: Ligurian.

1861.	Heer.	Saporta, Heer, rech. climat pays tert., 153 (undescr.).

5170. Bibio mimas. (Bibionidæ.)

Locality: Rott, Rhenish Prussia. Horizon: Aquitanian.

1870.	L. Heyden.	Foss. dipt. Rott, 22. *Pl.* 2, *fig.* 26.
1870.	"	Palaeontogr., xvii: 258. *Pl.* 45, *fig.* 26.

Bibio minor. See Bibio gracilis minor.

5171. Bibio mœstus. (Bibionidæ.)

Compared with B. pomonæ L.

Localities: Oeningen, Baden; Aix, France. Horizons: Mayencian, Ligurian.

1849.	Heer.	Insektenf. tertiärg. Oeningen, ii: 224–225. *Pl.* 16, *fig.* 15.
1852.	Giebel.	Deutschl. petref., 641.
1856.	"	Insect. d. vorwelt, 220.
1856.	Heer.	Viert. naturf. gesellsch. Zürich, i: 33–34.
1865.	"	Urwelt der Schweiz, 396.
1872.	"	Monde prim. Suisse, 485.
1876.	"	Prim. world Switz, ii: 55.
1879.	"	Urwelt der Schweiz, 2e aufl., 421.

5172. Bibio morio. (Bibionidæ.)

Localities: Radoboj, Croatia; Aix, France. Horizons: Mayencian, Ligurian.

1849.	Heer.	Insektenf. tertiärg. Oeningen, ii: 222. *Pl.* 16, *fig.* 13.
1852.	Giebel.	Deutschl. petref., 641.
1856.	"	Insect. d. vorwelt, 219–220.
1856.	Heer.	Viert. naturf. gesellsch. Zürich, i: 33.

5173. Bibio murchisonis. (Bibionidæ.)

Locality: Radoboj, Croatia. Horizon: Mayencian.

1841.	Unger.	Verhandl. leop.-carol. deutschl. akad. naturf., xix: 426. *Pl.* 71, *fig.* 3.
1841.	"	Foss. insect., 14. *Pl.* 71, *fig.* 3.

See also Bibiopsis murchisonii, etc.

5174. Bibio oblongus. (Bibionidæ.)

Locality: Oeningen, Baden. Horizon: Tortonian.

1849.	Heer.	Insektenf. tertiärg. Oeningen, ii: 227. *Pl.* 16, *fig.* 18.
1852.	Giebel.	Deutschl. petref., 641.
1856.	"	Insect. d. vorwelt, 221.

5175. Bibio obsoletus. (Bibionidæ.)

Localities: Oeningen, Baden; Corent, France. **Horizons: Tortonian, Aquitanian.**

1849. Heer. Insektenf. tertiärg. Oeningen. ii: 227–228. *Pl.* 16, *fig.* 19.
1852. Giebel. Deutschl. petref., 641.
1856. " Insect. d. vorwelt, 221.
1870. Oustalet. Ann. sc. géol., ii, art. 3: 136. *Pl.* 4, *fig.* 13.

Bibio œningensis. See Bibio pinguis œningensis.

5176. Bibio pannosus. (Bibionidæ.)

Compared with B. lividus Heer.

Locality: Rott, Rhenish Prussia. Horizon: **Aquitanian.**

1865. Heyd.-Heyd. Palaeontogr., xiv: 20. *Pl.* 8, *fig.* 1.
See also Bibio tertiarius.

5177. Bibio partschii. (Bibionidæ.)

Locality: Radoboj, Croatia. Horizon: **Mayencian.**

1849. Heer. Insektenf. tertiärg. Oeningen, ii: 216. *Pl.* 16, *fig.* 5.
1852. Giebel. Deutschl. petref., 641.
1856. " Insect. d. vorwelt, 217.

5178. Bibio pinguis. (Bibionidæ.)

Localities: Oeningen, Baden; Radoboj, Croatia. Horizons: **Tortonian, Mayencian.**

1849. Heer. Insektenf. tertiärg. Oeningen, ii: 220–221. *Pl.* 16, *figs.* 11*a–c*.
1852. Giebel. Deutschl. petref., 641.
1856. " Insect. d. vorwelt, 219.
See also Bibio pinguis œningensis, B. pinguis radobojanus.

5179. Bibio pinguis œningensis. (Bibionidæ.)

Locality: Oeningen, Baden. Horizon: **Tortonian.**

1849. Heer. Insektenf. tertiärg. Oeningen, ii: 221. *Pl.* 16, *fig.* 11*b*.
See also Bibio pinguis, etc.

5180. Bibio pinguis radobojanus. (Bibionidæ.)

Locality: Radoboj, Croatia. Horizon: **Mayencian.**

1849. Heer. Insektenf. tertiärg. Oeningen, ii: 220–221. *Pl.* 16, *fig.* 11*a*.
See also Bibio pinguis, etc.

5181. Bibio pulchellus. (Bibionidæ.)

Locality: Oeningen, Baden. Horizon: **Tortonian.**

1849. Heer. Insektenf. tertiärg. Oeningen, ii: 217. *Pl.* 16, *fig.* 6.
1852. Giebel. Deutschl. petref., 641.
1856. " Insect. d. vorwelt, 217.

Bibio radobojanus. See Bibio pinguis radobojanus.

5182. Bibio robustus. (Bibionidæ.)

Localities: Corent, Anthezat, France. Horizon: **Aquitanian.**

1870. Oustalet. Ann. sc. géol., ii, art. 3: 128–129. *Pl.* 4, *figs.* 7–9.

5183. **Bibio sereri.** (Bibionidæ.)

Locality: Monte Bolca, Italy. Horizon: **Ligurian.**

1856. **Massalongo.** Stud. paleont., 21. *Pl.* 2, *fig.* 3, 4.
1886. Omboni. Atti r. ist. ven., (6), iv: 1427. *Pl.* 2, *figs.* 10–11.
1886. " Ins. foss. Ven., 7. *Pl.* 2, *figs.* 10–11.

5184. **Bibio tertiarius.** (Bibionidæ.)

Locality: Rott, Rhenish Prussia. Horizon: **Aquitanian.**

1862. Heyden. Palaeontogr., x: 78. *Pl.* 10, *fig.* 38.
1865. Heyd.-Heyd. Palaeontogr., xiv: 30.
See also Bibio pannosus.

5185. **Bibio ungeri.** (Bibionidæ.)

Localities: Radoboj, Croatia; Côte Ladoux, France. Horizon: **Mayencian.**

1849. Heer. Insektenf. tertiärg. Oeningen, ii: 218-219. *Pl.* 16, *fig.* 8.
1852. Giebel. Deutschl. petref., 641.
1856. " Insect. d. vorwelt, 218.
1870. Oustalet. Ann. sc. géol. ii, art. 3: 123–124. *Pl.* 1, *figs.* 16*abc*.
See also Bibio lignarius, etc., Bibio ungeri marginatus.

5186. **Bibio ungeri marginatus.** (Bibionidæ.)

Locality: Corent, France. Horizon: Aquitanian.

1870. Oustalet. Ann. sc. géol., ii, art. 3: 125–126. *Pl.* 3, *fig.* 14; *pl.* 4, *fig.* 5.
See also Bibio ungeri.

5187. **Bibio xylophilus.** (Bibionidæ.)

Compared with B. marci.

Locality: Bonn, Rhenish Prussia. Horizon: Aquitanian.

1837. Germar. Fauna insect. Europæ, xix: 22. *Pl.* 22.
1852. Geibel. Deutschl. petref., 641.
1856. " Insect. d. vorwelt, 218.

5188. **Bibiopsis brevicollis.** (Bibionidæ.)

Locality: Radoboj, Croatia. Horizon: Mayencian.

1849. Heer. Insektenf. tertiärg. Oeningen, ii: 231. *Pl.* 15, *fig.* 26.
1852. Giebel. Deutschl. petref., 642.
1853–'56. Bronn. Lethæa geogn, 3e aufl., iii: 640. *Pl.* 42', *fig.* 11*b*.
1856. Giebel. Insect. d. vorwelt, 223.
See also Penthetria brevicollis.

5189. **Bibiopsis carbonum.** (Bibionidæ.)

Locality: Salzhausen, Germany. Horizon: Miocene

1865. Heyd.-Heyd. Palaeontogr., xiv: 34–35. *Pl.* 9, *fig.* 21.

5190. **Bibiopsis cimicoides.** (Bibionidæ.)

Locality: Radoboj, Croatia. Horizon: Mayencian.

1849. Heer. Insektenf. tertiärg. Oeningen, ii: 229. *Pl.* 15, *fig.* 24.
1852. Giebel. Deutschl. petref., 641.
1856. " Insect. d. vorwelt, 222.
See also Penthetria cimicoides.

5191. Bibiopsis egerana. (Bibionidæ.)

Locality: Krottensee, Bohemia. Horizon: Aquitanian.

1877. Novák. Sitzungsb. k. akad. wiss. Wien, lxxvi: 83. *Pl.* 1, *fig.* 3.
1877. " Fauna egerer tertiärb., 13. *Pl.* 1, *fig.* 3.

5192. Bibiopsis funebris. (Bibionidæ.)

Locality: Aix, France. Horizon: Ligurian.

1861. Heer. Saporta, Heer, Rech. climat pays tert., 153 (undescr.).

5193. Bibiopsis imperialis. (Bibionidæ.)

Locality: Krottensee, Bohemia. Horizon: Aquitanian.

1877. Novák. Sitzungsb. k. akad. wiss. Wien, lxxvi: 84. *Pl.* 2, *fig.* 3.
1877. " Fauna egerer tertiärb., 14. *Pl.* 2, *fig.* 3.

5194. Bibiopsis murchisonii. (Bibionidæ.)

Locality: Radoboj, Croatia. Horizon: Mayencian.

1849. Heer. Insektenf. tertiärg. Oeningen, ii: 230–231. *Pl.* 15, *fig.* 25.
1852. Giebel. Deutschl. petref., 642.
1853–'56. Bronn. Lethæa géogn., 3e aufl., iii: 640. *Pl.* 42', *fig.* 11*a*.
1856. Giebel. Insect. d. vorwelt, 222–223.
See also Bibio murchisonis, Penthetria murchisoni.

5195. Bibiopsis volgeri. (Bibionidæ.)

Locality: Rott, Rhenish Prussia. Horizon: Aquitanian.

1859. Heyden. Palaeontogr., viii: 15. *Pl.* 1, *fig.* 5.
See also Protomyia volgeri.

5196. Bolbomyia ———. (Xylophagidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1850. Loew. Bernsteinfauna, 39 (undescr.).
1856. Giebel. Insect. d. vorwelt, 204 (undescr.).
1862. Loew. Monogr. diptera N. A., i: 17 (undescr.).

5197. Boletina ———. (Mycetophilidæ.)

Locality: Brunstatt, Alsatia. Horizon: Middle Oligocene.

1890. Foerster. In litt.

5198. Boletina paludivaga. (Mycetophilidæ.)

Locality: Green River, Wyo. Horizon: Oligocene.

1890. Scudder. Tert. ins. N. A., 594. *Pl.* 10, *fig.* 7.

5199. Boletina philhydra. (Mycetophilidæ.)

Locality: Rott, Rhenish Prussia. Horizon: Aquitanian.

1870. L. Heyden. Foss. dipt. Rott, 10. *Pl.* 1, *fig.* 11.
1870. " Palaeontogr., xvii: 246. *Pl.* 44, *fig.* 11.

5200. Boletina sepulta. (Mycetophilidæ.)

Locality: Quesnel, British Columbia. Horizon: ———.

1877. Scudder. Rep. geol. surv. Can., 1875–'76: 271.
1877. " Ins. tert. Quesnel, 6.
1877. " Rapp. opér. comm. géol. Can., 1875–'76: 299–300.
1890. " Tert. ins. N. A., 593. *Pl.* 3, *fig.* 9.

5201. Boletina umbratica. (Mycetophilidæ.)

Locality: Green River, Wyo. Horizon: Oligocene.

1890. Scudder. Tert. ins. N. A., 593–594. *Pl.* 10, *fig.* 3.

5202. Boletophila ——. (Mycetophilidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1832. Burmeister. Handb. ent., i: 637.

1836. " Man. ent., 578.

Bombylis ——. See Bombylius —— Schlotheim.

5203. Bombylius ——. (Bombylidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1830. Berendt. Insekten im bernstein, 30.

5204. Bombylius ——. Bombylidæ.)

Locality: Oeningen, Baden. Horizon: Tortonian.

1820. Schlotheim. Petrefactenkunde, 43 (Bombylis).

5205. Brachypeza abita. (Mycetophilidæ.)

Locality: Quesnel, British Columbia. Horizon: ——.

1877. Scudder. Rep. geol. surv. Can., 1875–'76: 271–272.

1877. " Insect. tert. Quesnel, 6–7.

1877. " Rapp. opér. comm. géol. Can., 1875–'76: 300.

1890. " Tert. ins. N. A., 591. *Pl.* 3, *figs.* 7, 8.

5206. Brachypeza procera. (Mycetophilidæ.)

Locality: Quesnel, British Columbia. Horizon: ——.

1877. Scudder. Rep. geol. surv. Can., 1875–'76: 272.

1877. " Insect. tert. Quesnel, 7.

1877. " Rapp. opér. comm. géol. Can., 1875–'76: 300–301.

1890. " Tert. ins. N. A., 591–592. *Pl.* 3, *fig.* 14.

5207. Brachystoma ——. (Empidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1845. Berendt. Bernst. befindl. organ. reste vorw., i: 57.

5208. Brachystoma spinulosa. (Empidæ.)

Compared with B. vesciculosa.

Locality: Prussian amber. Horizon: Ligurian.

1850. Loew. Bernsteinfauna, 41 (undescr.).

1856. Giebel. Insect. d. vorwelt, 209.

5209. Callomyia torporata. (Platypezidæ.)

Locality: Green River, Wyo. Horizon: Oligocene.

1890. Scudder. Tert. ins. N. A., 555. *Pl.* 9, *fig.* 11.

5210. Calobamon ——. (Tipulidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1850. Loew. Bernsteinfauna, 36, 38.

5211. Calobata ——. (Micropezidæ.)

Locality: Prussian amber. Horizon: Ligurian.

850. Loew. Bernsteinfauna, 44.

5212. Campylomyza ——. (Cecidomyidæ.)

Locality: Prussian amber. Horizon: Ligurian.

845. Berendt. Bernst. befindl. organ. reste vorw., i: 57.

5213. Campylomyza (vic.) ——. (Cecidomyidæ.)

Locality: Prussian amber. Horizon: Ligurian.

870. Giebel. Zeitschr. ges. naturwiss., (2), i: 87.

5214. Campylomyza monilifera. (Cecidomyidæ.)

Locality: Prussian amber. Horizon: Ligurian.

850. Loew. Bernsteinfauna, 32.
856. Giebel. Insect. d. vorwelt, 248.

5215. Cecidomyia ——. (Cecidomyidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1845. Berendt. Bernst. befindl. organ. reste vorw., i: 57.

5216. Cecidomyia ——. (Cecidomyidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1831. Burmeister. Oken, Isis, 1831: 1100.
1832. " Handb. ent., i: 637.
1836. " Man. ent., 578.

5217. Cecidomyia —— (2 sp.). (Cecidomyidæ.)

Locality: Sicilian amber. Horizon: ——.

1838. Guérin. Rev. zool., 1838: 170.

5218. Cecidomyia bremii. (Cecidomyidæ.)

Compared with C. salicis.

Locality: Oeningen, Baden. Horizon: Tortonian.

1865. Heer. Urwelt der Schweiz. *Fig.* 322 on *p.* 394.
1872. " Monde prim. Suisse. *Fig.* 322 on *p.* 484.
1876. " Prim. world Switz., ii. *Fig.* 322 on *p.* 54.
1879. " Urwelt der Schweiz, 2e aufl. *Fig.* 364 on *p.* 420.

5219. Cecidomyia? dubia (gall). (Cecidomyidæ.)

Locality: Rott, Rhenish Prussia. Horizon: Aquitanian.

1862. Heyden. Palaeontogr., x: 80–81 (on leaf of Juglans acuminata Braun). *Pl.* 10, *fig.* 4.

5220. Cecidomyia protogæa. (Cecidomyidæ.)

Locality: Aix, France. Horizon: Ligurian.

1856. Heer. Viert. naturf. gesellsch. Zürich, i: 32–33. *Pl.* 2, *fig.* 4.

5221. Ceratopogon ——. (Chironomidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1845. Berendt. Bernst. befindl. organ. reste vorw., i: 57.
1850. Loew. Bernsteinfauna, 30 (26 sp.).

5222. Ceratopogon ——. (Chironomidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1831. Burmeister. Oken, Isis, 1831: 1100.
1832. " Handb. ent., i: 637.
1836. " Man. ent., 578.

5223. Ceratopogon ——. (Chironomidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1841. Ehrenberg. Froriep, Neue notizen, xix: 120.

5224. Ceratopogon ——. (Chironomidæ.)

Locality: Sicilian amber. Horizon: ——.

1840. Rondani. Rev. zool., 1840: 369.
1840. Erichson. Arch. f. naturg., (5), ii: 309.
1840. " Ber. wiss. leist. entom., 1838: 29.
See also Dasypogon —— Guérin.

5225. Ceratopogon ——. (Chironomidæ.)

Locality: Aix, France. Horizon: Ligurian.

1829. Serres. Géogn. terrains tert., 231.

5226. Ceratopogon alpheus. (Chironomidæ.)

Locality: Rott, Rhenish Prussia. Horizon: Aquitanian.

1870. L. Heyden. Foss. dipt. Rott, 15–16. *Pl.* 1, *fig.* 20.
1870. " Palaeontogr., xvii: 251–252. *Pl.* 44, *fig.* 20.

5227. Ceratopogon anomalicornis. (Chironomidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1850. Loew. Bernsteinfauna, 30.
1856. Giebel. Insect. d. vorwelt, 252.

5228. Ceratopogon clunipes. (Chironomidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1850. Loew. Bernsteinfauna, 30.
1856. Giebel. Insect. d. vorwelt, 252.

5229. Ceratopogon escheri. (Chironomidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1856. Giebel. Insect. d. vorwelt, 252.

5230. Ceratopogon spiniger. (Chironomidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1850. Loew. Bernsteinfauna, 30.
1856. Giebel. Insect. d. vorwelt, 252.

Cheilosia ——. See Chilosia —— Scudder, 1878.

Cheilosia ampla. See Chilosia ampla.

5231. Chilosia ——. (Syrphidæ.)

Locality: Green River, Wyo. **Horizon:** Oligocene.

1878.	**Scudder.**	Bull. U. S. geol. surv. terr., iv: 754 (Cheilosia).
1890.	"	Tert. ins. N. A., 561. *Pl.* 9, *fig.* 8.

5232. Chilosia ? ——. (Syrphidæ.)

Locality: Green River, Wyo. **Horizon:** Oligocene.

1890.	**Scudder.**	Tert. ins. N. A., 561. *Pl.* 9, *fig.* 26.

5233. Chilosia ——. (Syrphidæ.)

Locality: Florissant, Colo. **Horizon:** Oligocene.

1886.	**Williston.**	Syn. N. A. Syrph., 282.

5234. Chilosia ampla. (Syrphidæ.)

Locality: Green River, Wyo. **Horizon:** Oligocene.

1878.	**Scudder.**	Bull. U. S. geol. surv. terr., iv: 753–754 (Cheilosia).
1886.	**Williston.**	Syn. N. A. Syrph., 281, 283.
1890.	**Scudder.**	Tert. ins. N. A., 559–560. *Pl.* 9, *figs.* 14, 27.

5235. Chironomus ——. (Chironomidæ.)

Locality: Prussian amber. **Horizon:** Ligurian.

1845.	**Berendt.**	Bernst. befindl. organ. reste vorw., i: 57.
1850.	**Loew.**	Bernsteinfauna, 29 (40 sp.).

5236. Chironomus ——. (Chironomidæ.)

Locality: Prussian amber. **Horizon:** Ligurian.

1832.	**Burmeister.**	Handb. ent., i: 637.
1836.	"	Man. ent., 578.

5237. Chironomus —— (pupa). (Chironomidæ.)

Locality: Rott, Rhenish Prussia. **Horizon:** Aquitanian.

1870.	**L. Heyden.**	Foss. dipt. Rott, 13–14, 30 (No. 6). *Pl.* 1, *fig.* 17.
1870.	"	Palaeontogr., xvii: 249–250, 266. *Pl.* 44, *fig.* 17.

5238. Chironomus —— (pupa). (Chironomidæ.)

Locality: Rott, Rhenish Prussia. **Horizon:** Aquitanian.

1870.	**L. Heyden.**	Foss. dipt. Rott, 14, 30 (No. 7). *Pl.* 1, *fig.* 18.
1870.	"	Palaeontogr., xvii: 250, 266. *Pl.* 44, *fig.* 18.

5239. Chironomus —— (pupa). (Chironomidæ.)

Locality: Rott, Rhenish Prussia. **Horizon:** Aquitanian.

1870.	**L. Heyden.**	Foss. dipt. Rott, 14, 30 (No. 8).
1870.	"	Palaeontogr., xvii: 250, 266.

5240. Chironomus —— (pupa). (Chironomidæ.)

Locality: Rott, Rhenish Prussia. **Horizon:** Aquitanian.

1870.	**L. Heyden.**	Foss. dipt. Rott, 15 (No. 9). *Pl.* 1, *fig.* 19.
1870.	"	Palaeontogr., xvii: 251. *Pl.* 44, *fig.* 19.

5241. Chironomus ——— (pupa.) (Chironomidæ.)

Locality: Rott, Rhenish Prussia. Horizon: Aquitanian.

1870. L. Heyden. Foss. dipt. Rott, 15 (No. 10).
1870. “ Palaeontogr., xvii: 251.

5242. Chironomus ——— (pupa). (Chironomidæ.)

Locality: Rott, Rhenish Prussia. Horizon: Aquitanian.

1870. L. Heyden. Foss. dipt. Rott, 15 (No. 11).
1870. “ Palaeontogr., xvii: 251.

5243. Chironomus ———. (Chironomidæ.)

Locality: Green River, Wyo. Horizon: Oligocene.

1878. Scudder. Bull. U. S. geol. surv. terr., iv: 749.
1890. “ Tert. ins. N. A., 581.

5244. Chironomus antiquus. (Chironomidæ.)

Locality: Rott, Rhenish Prussia. Horizon: Aquitanian.

1859. Heyden. Palaeontogr., viii: 13. *Pl.* 2, *fig.* 10.

5245. Chironomus bituminosus. (Chironomidæ.)

Locality: Rott, Rhenish Prussia. Horizon: Aquitanian.

1870. L. Heyden. Foss. dipt. Rott, 11. *Pl.* 1, *fig.* 12.
1870. “ Palaeontogr., xvii: 247. *Pl.* 44, *fig.* 12.

5246. Chironomus brevirostris. (Chironomidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1856. Giebel. Insect. d. vorwelt, 251.

5247. Chironomus decrepitus. (Chironomidæ.)

Locality: Rott, Rhenish Prussia. Horizon: Aquitanian.

1870. L. Heyden. Foss. dipt. Rott, 12. *Pl.* 1, *fig.* 15.
1870. “ Palaeontogr., xvii: 248. *Pl.* 44, *fig.* 15.

5248. Chironomus depletus. (Chironomidæ.)

Locality: White River, Colo. Horizon: Oligocene.

1877. Scudder. Bull. U. S. geol. surv. terr., iii: 744.
1890. “ Tert. ins. N. A., 579–580. *Pl.* 5, *fig.* 62.

5249. Chironomus dorminans. (Chironomidæ.)

Locality: Rott, Rhenish Prussia. Horizon: Aquitanian.

1870. L. Heyden. Foss. dipt. Rott, 12. *Pl.* 1, *fig.* 14.
1870. “ Palaeontogr., xvii: 248. *Pl.* 44, *fig.* 14.

5250. Chironomus gaudini. (Chironomidæ.)

Locality: Oeningen, Baden. Horizon: Tortonian.

1865. Heer. Urwelt der Schweiz, 395. *Fig.* 316 on *p.* 394.
1872. “ Monde prim. Suisse, 483. *Fig.* 316 on *p.* 484.
1876. “ Prim. world Switz., ii: 53. *Fig.* 316 on *p.* 54.
1879. “ Urwelt der Schweiz, 2ᵉ aufl., 420. *Fig.* 358.

5251. **Chironomus meyeri.** (Chironomidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1849.	Heer.	Insektenf. tertiärg. Oeningen, ii: 188–189. *Pl.* 14, *fig.* 13.
1850.	"	Neue denkschr. schweiz. gesellsch. wiss., xi: 188–189. *Pl.* 14, *fig.* 13.
1852.	Giebel.	Deutschl. petref., 640.
1856.	"	Insect. d. vorwelt, 250–251.
1885.	Scudder.	Zittel, Handb. palaeont., i, th. ii: 810. *Figs.* 1083, 1084.
1886.	"	Zittel-Barrois, Traité de paléont., ii: 811. *Figs.* 1100, 1101.

5252. **Chironomus microcephalus.** (Chironomidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1856.	Giebel.	Insect. d. vorwelt, 251.

5253. **Chironomus obsoletus.** (Chironomidæ.)

Locality: Oeningen, Baden. Horizon: Tortonian.

1849.	Heer.	Insektenf. tertiärg. Oeningen, ii: 190. *Pl.* 14, *fig.* 15.
1850.	"	Neue denkschr. schweiz. gesellsch. wiss., xi: 190. *Pl.* 14, *fig.* 15.
1852.	Giebel.	Deutschl. petref., 640.
1856.	"	Insect. d. vorwelt, 250.

5254. **Chironomus œningensis.** (Chironomidæ.)

Locality: Oeningen, Baden. Horizon: Tortonian.

1849.	Heer.	Insektenf. tertiärg. Oeningen, ii: 189–190. *Pl.* 14, *fig.* 14.
1850.	"	Neue denkschr. schweiz. gesellsch. wiss., xi: 189–190. *Pl.* 14, *fig.* 14.
1852.	Giebel.	Deutschl. petref., 640.
1856.	"	Insect. d. vorwelt, 250.

5255. **Chironomus palæmon.** (Chironomidæ.)

Locality: Rott, Rhenish Prussia. Horizon: Aquitanian.

1870.	L. Heyden.	Foss. dipt. Rott, 13. *Pl.* 1, *fig.* 16.
1870.	"	Palaeontogr., xvii: 249. *Pl.* 44, *fig.* 16.

5256. **Chironomus patens.** (Chironomidæ.)

Locality: White River, Colo. Horizon: Oligocene.

1877.	Scudder.	Bull. U. S. geol. surv. terr., iii: 744–745.
1890.	"	Tert. ins. N. A., 580–581. *Pl.* 5, *figs.* 18, 19, 28.

5257. **Chironomus perditus.** (Chironomidæ.)

Locality: Rott, Rhenish Prussia. Horizon: Aquitanian.

1870.	L. Heyden.	Foss. dipt. Rott, 11–12. *Pl.* 1, *fig.* 13.
1870.	"	Palaeontogr., xvii: 247–248. *Pl.* 44, *fig.* 13.

5258. **Chironomus septus.** (Chironomidæ.)

Locality: Green River, Wyo. Horizon: Oligocene.

1890.	Scudder.	Tert. ins. N. A., 578–579. *Pl.* 10, *fig.* 8.

5259. Chironomus sepultus. (Chironomidæ.)

Locality: Radoboj, Croatia. **Horizon:** Mayencian.

1849. **Heer.** Insektenf. tertiärg. Oeningen, ii: 190–191. *Pl.* 11, *fig.* 14; *pl.* 14, *fig.* 16.
1850. " Neue denkschr. schweiz. gesellsch. wiss., xi: 190–191. *Pl.* 11, *fig.* 14; *pl.* 14, *fig.* 16.
1852. **Giebel.** Deutschl. petref., 640.
1856. " Insect. d. vorwelt, 250.

5260. Chlorops ——. (Oscinidæ.)

Locality: Prussian amber. **Horizon:** Ligurian.

1850. **Loew.** Bernsteinfauna, 43.

5261. Chrysogaster ——. (Syrphidæ.)

Locality: Florissant, Colo. **Horizon:** Oligocene.

1886. **Williston.** Syn. N. A. Syrphidæ, 281.

5262. Chrysothemis ——. (Xylophagidæ.)

Locality: Prussian amber. **Horizon:** Ligurian.

1845. **Berendt.** Bernst. befindl. organ. reste vorw., i: 57.

5263. Chrysothemis speciosa. (Xylophagidæ.)

Locality: Prussian amber. **Horizon:** Ligurian.

1850. **Loew.** Bernsteinfauna, 39 (undescr.).
1856. **Giebel.** Insect. d. vorwelt, 226 (undescr.).

5264. Chrysotus ——. (Dolichopodidæ.)

Locality: Prussian amber. **Horizon:** Ligurian.

1845. **Berendt.** Bernst. befindl. organ. reste vorw., i: 57.
1850. **Loew.** Bernsteinfauna, 42.

5265. Chrysotus ——. (Dolichopodidæ.)

Locality: Prussian amber. **Horizon:** Ligurian.

1870. **Giebel.** Zeitschr. ges. naturw., (2), i: 87.

5266. Chrysotus setosus. (Dolichopodidæ.)

Locality: Prussian amber. **Horizon:** Ligurian.

1856. **Giebel.** Insect. d. vorwelt, 205.

5267. Conops ——. (Conopidæ.)

Locality: Copal. **Horizon:** Recent.

1776. **Bloch.** Beschäft. berl. ges. naturf. freunde, ii: 178. *Pl.* 5, *fig.* 19.

5268. Cordyla antiqua. (Mycetophilidæ.)

Locality: Rott, Rhenish Prussia. **Horizon:** Aquitanian.

1870. **L. Heyden.** Foss. dipt. Rott, 8–9. *Pl.* 1, *fig.* 9.
1870. " Palaeontogr., xvii: 244–245. *Pl.* 44, *fig.* 9.

5269. Cordyla limnoria. (Mycetophilidæ.)

Locality: Rott, Rhenish Prussia. Horizon: Aquitanian.

1870. L. Heyden. Foss. dipt. Rott, 9–10. *Pl.* 1, *fig.* 10.
1870. “ Palaeontogr., xvii: 245–246. *Pl.* 44, *fig.* 10.

5270. Cordyla renuda. (Mycetophilidæ.)

Locality: Rott, Rhenish Prussia. Horizon: Aquitanian.

1870. L. Heyden. Foss. dipt. Rott, 9. *Pl.* 1, *fig.* 9.
1870. “ Palaeontogr., xvii: 245. *Pl.* 44, *fig.* 9.

5271. Cordyla subaptera. (Mycetophilidæ.)

Locality: Rott, Rhenish Prussia. Horizon: Aquitanian.

1870. L. Heyden. Foss. dipt. Rott, 8. *Pl.* 1, *fig.* 8.
1870. “ Palaeontogr., xvii: 244. *Pl.* 44, *fig.* 8.

5272. Cordyla vetusta. (Mycetophilidæ.)

Locality: Rott, Rhenish Prussia. Horizon: Aquitanian.

1870. L. Heyden. Foss. dipt. Rott, 7–8. *Pl.* 1, *fig.* 7.
1870. “ Palaeontogr., xvii: 243–244. *Pl.* 44, *fig.* 7.

5273. Cordylura vetusta. (Cordyluridæ.)

Locality: Radoboj, Croatia. Horizon: Mayencian.

1849. Heer. Insektenf. tertiärg. Oeningen, ii: 250. *Pl.* 17, *fig.* 21.
1852. Giebel. Deutschl. petref., 643.
1856. “ Insect. d. vorwelt, 195.

5274. Corethra ——. (Culicidæ.)

Locality: Aix, France. Horizon: Oligocene.

1847. Hope. Trans. ent. soc. Lond., iv: 252.

5275. Corethra ——. (Culicidæ.)

Locality: Aix, France. Horizon: Ligurian.

1829. Serres. Géogn. terrains tert., 268.

5276. Corethra exita. (Culicidæ.)

Locality: White River, Colo. Horizon: Oligocene.

1877. Scudder. U. S. bull. geol. surv. terr., iii: 744.
1890. “ Tert. ins. N. A., 583. *Pl.* 5, *figs.* 22, 23.

5277. Corsomyza crassirostris. (Bombylidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1850. Loew. Bernsteinfauna, 40 (undescr.).
1856. Giebel. Insect. d. vorwelt, 213 (undescr.).
1861. Loew. Dipt. faun. bernst., 6.
1869. “ Dipt. amber, 7.

Criorhina ——. See Criorrhina ——.

5278. Criorrhina ——. (Syrphidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1870. Giebel. Zeitschr. ges. naturw., (2), i: 87 (Criorhina).

5259. Chironomus sepultus. (Chironomidæ.)

Locality: Radoboj, Croatia. Horizon: Mayencian.

1849. **Heer.** Insektenf. tertiärg. Oeningen, ii: 190–191. *Pl.* 11, *fig.* 14; *pl.* 14, *fig.* 16.
1850. " Neue denkschr. schweiz. gesellsch. wiss., xi: 190–191. *Pl.* 11, *fig.* 14; *pl.* 14, *fig.* 16.
1852. **Giebel.** Deutschl. petref., 640.
1856. " Insect. d. vorwelt, 250.

5260. Chlorops ——. (Oscinidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1850. **Loew.** Bernsteinfauna, 43.

5261. Chrysogaster ——. (Syrphidæ.)

Locality: Florissant, Colo. Horizon: Oligocene.

1886. **Williston.** Syn. N. A. Syrphidæ, 281.

5262. Chrysothemis ——. (Xylophagidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1845. **Berendt.** Bernst. befindl. organ. reste vorw., i: 57.

5263. Chrysothemis speciosa. (Xylophagidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1850. **Loew.** Bernsteinfauna, 39 (undescr.).
1856. **Giebel.** Insect. d. vorwelt, 226 (undescr.).

5264. Chrysotus ——. (Dolichopodidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1845. **Berendt.** Bernst. befindl. organ. reste vorw., i: 57.
1850. **Loew.** Bernsteinfauna, 42.

5265. Chrysotus ——. (Dolichopodidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1870. **Giebel.** Zeitschr. ges. naturw., (2), i: 87.

5266. Chrysotus setosus. (Dolichopodidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1856. **Giebel.** Insect. d. vorwelt, 205.

5267. Conops ——. (Conopidæ.)

Locality: Copal. Horizon: Recent.

1776. **Bloch.** Beschäft. berl. ges. naturf. freunde, ii: 178. *Pl.* 5, *fig.* 19.

5268. Cordyla antiqua. (Mycetophilidæ.)

Locality: Rott, Rhenish Prussia. Horizon: Aquitanian.

1870. **L. Heyden.** Foss. dipt. Rott, 8–9. *Pl.* 1, *fig.* 9.
1870. " Palaeontogr., xvii: 244–245. *Pl.* 44, *fig.* 9.

5269. Cordyla limnoria. (Mycetophilidæ.)

Locality: Rott, Rhenish Prussia. Horizon: Aquitanian.

1870. L. Heyden. Foss. dipt. Rott, 9–10. *Pl.* 1, *fig.* 10.
1870. " " Palaeontogr., xvii: 245–246. *Pl.* 44, *fig.* 10.

5270. Cordyla renuda. (Mycetophilidæ.)

Locality: Rott, Rhenish Prussia. Horizon: Aquitanian.

1870. L. Heyden. Foss. dipt. Rott, 9. *Pl.* 1, *fig.* 9.
1870. " Palaeontogr., xvii: 245. *Pl.* 44, *fig.* 9.

5271. Cordyla subaptera. (Mycetophilidæ.)

Locality: Rott, Rhenish Prussia. Horizon: Aquitanian.

1870. L. Heyden. Foss. dipt. Rott, 8. *Pl.* 1, *fig.* 8.
1870. " Palaeontogr., xvii: 244. *Pl.* 44, *fig.* 8.

5272. Cordyla vetusta. (Mycetophilidæ.)

Locality: Rott, Rhenish Prussia. Horizon: Aquitanian.

1870. L. Heyden. Foss. dipt. Rott, 7–8. *Pl.* 1, *fig.* 7.
1870. " Palaeontogr., xvii: 243–244. *Pl.* 44, *fig.* 7.

5273. Cordylura vetusta. (Cordyluridæ.)

Locality: Radoboj, Croatia. Horizon: Mayencian.

1849. Heer. Insektenf. tertiärg. Oeningen, ii: 250. *Pl.* 17, *fig.* 21.
1852. Giebel. Deutschl. petref., 643.
1856. " Insect. d. vorwelt, 195.

5274. Corethra ———. (Culicidæ.)

Locality: Aix, France. Horizon: Oligocene.

1847. Hope. Trans. ent. soc. Lond., iv: 252.

5275. Corethra ———. (Culicidæ.)

Locality: Aix, France. Horizon: Ligurian.

1829. Serres. Géogn. terrains tert., 268.

5276. Corethra exita. (Culicidæ.)

Locality: White River, Colo. Horizon: Oligocene.

1877. Scudder. U. S. bull. geol. surv. terr., iii: 744.
1890. " Tert. ins. N. A., 583. *Pl.* 5, *figs.* 22, 23.

5277. Corsomyza crassirostris. (Bombylidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1850. Loew. Bernsteinfauna, 40 (undescr.).
1856. Giebel. Insect. d. vorwelt, 213 (undescr.).
1861. Loew. Dipt. faun. bernst., 6.
1869. " Dipt. amber, 7.

Criorhina ———. See Criorrhina ———.

5278. Criorrhina ———. (Syrphidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1870. Giebel. Zeitschr. ges. naturw., (2), i: 87 (Criorhina).

5279. Critoneura longipes. (Tipulidæ.)

Locality: Prussian amber. **Horizon:** Ligurian.

1850. Loew. Bernsteinfauna, 38 (undescr.).
1856. Giebel. Insect. d. vorwelt, 246 (undescr.).

5280. Critoneura pentagonalis. (Tipulidæ.)

Locality: Prussian amber. **Horizon:** Ligurian.

1850. Loew. Bernsteinfauna, 38 (undescr.).
1856. Giebel. Insect. d. vorwelt, 247 (undescr.).

5281. Ctenophora ? ———. (Tipulidæ.)

Locality: Brunstatt, Alsatia. **Horizon:** Middle Oligocene.

1889. Foerster. Mitth. comm. geol. Elsass-Lothr., ii: 103.

5282. Ctenophora decheni. (Tipulidæ.)

Locality: Rott, Rhenish Prussia. **Horizon:** Aquitanian.

1859. Heyden. Palaeontogr., viii: 13–14. *Pl.* 2, *figs.* 7, 8.

5283. Culex ———. (Culicidæ.)

Locality: Brunstatt, Alsatia. **Horizon:** Middle Oligocene.

1890. Foerster. In litt.

5284. Culex ———. (Culicidæ.)

Locality: Rott, Rhenish Prussia. **Horizon:** Aquitanian.

1870. L. Heyden. Foss. dipt. Rott, 16 (No. 2).
1870. " Palaeontogr., xvii: 252.

5285. Culex ———. (Culicidæ.)

Locality: Prussian amber. **Horizon:** Ligurian.

1845. Motschulsky. Bull. soc. imp. nat. Mosc., xviii, ii: 98.

5286. Culex ———. (Culicidæ.)

Locality: Prussian amber. **Horizon:** Ligurian.

1820. Schlotheim. Petrefactenk., 43.

5287. Culex ceyx. (Culicidæ.)

Locality: Rott, Rhenish Prussia. **Horizon:** Aquitanian.

1870. L. Heyden. Foss. dipt. Rott, 16, 30. *Pl.* 1, *fig.* 21.
1870. " Palaeontogr., xvii: 252, 266. *Pl.* 14, *fig.* 21.
1885. Scudder. Zittel, Handb. palaeont., i, th. ii: 810. *Fig.* 1085.
1886. " Zittel-Barrois, Traité de paléont., ii: 812. *Fig.* 1102.

5288. Culex ciliaris. (Culicidæ.)

Locality: Copal. **Horizon:** Recent.

1776. Bloch. Beschäft. berl. ges. naturf. freunde, ii: 164–165. *Pl.* 3, *fig.* 1.

5289. Culex damnatorum. (Culicidæ.)

Locality: Green River, Wyo. **Horizon:** Oligocene.

1890. Scudder. Tert. ins. N. A., 582. *Pl.* 10, *fig.* 14.

5290. Culex loewi. (Culicidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1862. Giebel. Zeitschr. ges. naturw., xx: 317–318.

5291. Culex proavitus. (Culicidæ.)

Locality: White River, Utah. Horizon: Oligocene.

1877. Scudder. Bull. U. S. geol. surv. terr., iii: 744.
1890. " Tert. ins. N. A., 582–583. *Pl.* 5, *figs.* 8, 9.

5292. Culicites tertiarius. (Culicidæ.)

Locality: Rott, Rhenish Prussia. Horizon: Aquitanian.

1862. Heyden. Palaeontogr., x: 79–80. *Pl.* 10, *figs.* 30–35.

5293. Curtisimyia eximia. (Stratiomyidæ.)

Locality: Aix, France. Horizon: Ligurian.

1829. Curtis. Edinb. new phil. journ., vii: 296. *Pl.* 6, *fig.* 12.
1829. " Murch.-Lyell, Tert. form. Aix, 12. *Pl.* 6, *fig.* 12.
1856. Giebel. Insect. d. vorwelt, 203.

5294. Cylindrotoma ——. (Tipulidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1845. Berendt. Bernst. befindl. organ. reste vorw., i: 57.

5295. Cylindrotoma brevicornis. (Tipulidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1850. Loew. Bernsteinfauna, 37 (undescr.).
1856. Giebel. Insect. d. vorwelt, 243 (undescr.).

5296. Cylindrotoma longicornis. (Tipulidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1850. Loew. Bernsteinfauna, 37 (undescr.).
1856. Giebel. Insect. d. vorwelt, 243 (undescr.).

5297. Cylindrotoma longipes. (Tipulidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1850. Loew. Bernsteinfauna, 37 (undescr.).
1856. Giebel. Insect. d. vorwelt, 243 (undescr.).

5298. Cylindrotoma succini. (Tipulidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1850. Loew. Bernsteinfauna, 37 (undescr.).
1856. Giebel. Insect. d. vorwelt, 243 (undescr.).

5299. Cyttaromyia fenestrata. (Tipulidæ.)

Locality: White River, Utah. Horizon: Oligocene.

1877. Scudder. Bull. U. S. geol. surv. terr., iii: 751–752.
1890. " Tert. ins. N. A., 575–576. *Pl.* 5, *fig.* 78.

5300. Dasypogon ——. (Asilidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1845. Berendt. Bernst. befindl. organ. reste vorw., i: 57.

5301. Dasypogon ——. (Asilidæ.)

Locality: Sicilian amber. Horizon: ——.

1838. Guérin. Rev. zool., 1838: 170. *Pl.* 1, *figs.* 15–16.
See also Ceratopogon —— Rondani.

5302. Dasypogon (Holopogon) pilipes. (Asilidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1850. Loew. Bernsteinfauna, 40 (undescr.).
1856. Giebel. Insect. d. vorwelt, 212 (undescr.).

5303. Diadocidia parallela. (Mycetophilidæ.)

Compared with D. flavicans.

Locality: Prussian amber. Horizon: Ligurian.

1850. Loew. Bernsteinfauna, 35 (undescr.).
1856. Giebel. Insect. d. vorwelt, 238 (undescr.).

5304. Diadocidia ? terricola. (Mycetophilidæ.)

Locality: Green River, Wyo. Horizon: Oligocene.

1878. Scudder. Bull. U. S. geol. surv. terr., iv: 750.
1890. " Tert. ins. N. A., 598–599. *Pl.* 10, *figs.* 10, 11.

5305. Dianepsia —— (2 sp.). (Mycetophilidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1850. Loew. Bernsteinfauna, 34.

5306. Dicæra ——. (Tipulidæ.)

Locality: Wigtonshire, Scotland. Horizon: Pleistocene.

1888. Bell. Entom., xxi: 2.

5307. Dichaneurum infossum. (Tipulidæ.)

Locality: LePuy, France. Horizon: ——.

1854. Aymard. Congr. scient. France, sess. xxii: 42 (undescr.).

5308. Dichaneurum primævum. (Tipulidæ.)

Locality: LePuy, France. Horizon: ——.

1854. Aymard. Congr. scient. France, sess. xxii: 42 (undescr.).

5309. Dicranomyia primitiva. (Tipulidæ.)

Compared with D. pubipennis.

Localities: White River, Utah; Green River, Wyo. Horizon: Oligocene.

1877. Scudder. Bull. U. S. geol. surv. terr., iii: 748.
1878. " Bull. U. S. geol. surv. terr., iv: 749.
1890. " Tert. ins. N. A., 570–571. *Pl.* 5, *figs.* 20, 21, 65–67.

5310. Dicranomyia rostrata. (Tipulidæ.)

Locality: White River, Utah. Horizon: Oligocene.

1877. Scudder. Bull. U. S. geol. surv. terr., iii: 749.
1890. " Tert. ins. N. A., 571–572. *Pl.* 5, *figs.* 40, 41, 63, 64.

5311. Dicranomyia stigmosa. (Tipulidæ.)

Localities: White River, Utah and Colorado. **Horizon:** Oligocene.

1877.	Scudder.	Bull. U. S. geol. surv. terr., iii: 746–748.
1890.	"	Tert. ins. N. A., 568–570. *Pl.* 5, *figs.* 16, 17, 25–27, 42, 43, 68, 69.

5312. Dilophus ——. (Bibionidæ.)

Locality: Prussian amber. **Horizon:** Ligurian.

1845.	Berendt.	Bernst. befindl. organ. reste vorw., i: 57.

5313. Dilophus ——. (Bibionidæ.)

Compared with D. marginatus.

Locality: Aix, France. **Horizon:** Ligurian.

1829.	Serres.	Géogn. terrains tert., 232.

5314. Dilophus krantzii. (Bibionidæ.)

Locality: Rott, Rhenish Prussia. **Horizon:** Aquitanian.

1870.	L. Heyden.	Foss. dipt. Rott, 19–21. *Pl.* 2, *fig.* 24.
1870.	"	Palaeontogr., xvii: 255–257. *Pl.* 45, *fig.* 24.

5315. Dilophus priscus. (Bibionidæ.)

Locality: Prussian amber. **Horizon:** Ligurian.

1850.	Loew.	Bernsteinfauna, 38.
1856.	Giebel.	Insect. d. vorwelt, 228.

5316. Diplonema ——. (Psychodidæ.)

Locality: Prussian amber. **Horizon:** Ligurian.

1845.	Berendt.	Bernst. befindl. organ. reste vorw., i: 57.

5317. Diplonema brevicornis. (Psychodidæ.)

Locality: Prussian amber. **Horizon:** Ligurian.

1850.	Loew.	Bernsteinfauna, 31 (undescr.).
1856.	Giebel.	Insect. d. vorwelt, 249.

5318. Diplonema longicornis. (Psychodidæ.)

Compared with D. buceras, Copal.

Locality: Prussian amber. **Horizon:** Ligurian.

1850.	Loew.	Bernsteinfauna, 31 (undescr.).
1856.	Giebel.	Insect. d. vorwelt, 249 (undescr.).
1861.	Loew.	Dipt. fauna bernstein, 8.
1861.	"	Ber. versamml. deutsch. naturf., xxxv: 93.
1869.	"	Amber diptera, 11.

5319. Diplosis ——. (Cecidomyidæ.)

Locality: Prussian amber. **Horizon:** Ligurian.

1850.	Loew.	Bernsteinfauna, 32.

5320. Dipterites angelinii.

Locality: Monte Bolca, Italy. **Horizon:** Ligurian.

1855.	Massalongo.	Nereide foss., 31 ("Comp. faun. flor. foss. bolcensis. *Pl.* 6, *figs.* 2–3," ined.).
1856.	"	Stud. palaeont., 20. *Pl.* 2, *figs.* 1–2.
1885.	Scudder.	Zittel, Handb. palaeont., i, th. ii: 806.

1886.	Scudder.	Zittel-Barrois, Traité de paléont., ii : 807.
1886.	"	Bull. U. S. geol. surv., No. 31 . 87.
1886.	Omboni.	Alc. ins. foss. Ven., 6–7. *Pl.* 2, *figs.* 8–9.
1886.	"	Atti r. ist. ven., (6), iv : 1426–1427. *Pl.* 2, *figs.* 8–9.

5321. Dipterites catulloi.

Locality: Chiavon, Italy. Horizon: ——.

1886.	Omboni.	Alc. ins. foss. Ven., 8–9. *Pl.* 3, *fig.* 13.
1886.	"	Atti r. ist. ven., (6), iv : 1428–1429. *Pl.* 3, *fig.* 13.

5322. Dipterites obovatus. (Œstridæ ?.)

Locality: Oeningen, Baden. Horizon: Tortonian.

1865.	Heer.	Urwelt der Schweiz. *Fig.* 323 on *p.* 394.
1872.	"	Monde prim. Suisse. *Fig.* 323 on *p.* 484.
1876.	"	Prim. world Switz , ii. *Fig.* 323 on *p.* 54.
1879.	"	Urwelt der Schweiz, 2e aufl. *Fig.* 365 on *p.* 420.
1885.	Scudder.	Zittel, Handb. palaeont., i, th. ii : 806. *Fig.* 1071.
1886.	"	Zittel-Barrois, Traité de paléont., ii : 807. *Fig.* 1088.
1886.	"	Bull. U. S. geol. surv., No. 31 : 87.

5323. Dipterites obsoletus. (Cordyluridæ ?.)

Locality: Radoboj, Croatia. Horizon: Mayencian.

1849.	Heer.	Insektenf. tertiärg. Oeningen, ii: 254–255 (obsoleta). *Pl.* 17, *fig.* 23.
1852.	Giebel.	Deutschl. petref., 643.
1886.	Scudder.	Bull. U. S. geol. surv., No. 31 : 87.

5324. Diorhiza ——. (Cecidomyidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1850.	Loew.	Bernsteinfauna, 32.

5325. Dixa ——. (Tipulidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1845.	Berendt.	Bernst. befindl. organ, reste vorw., i : 57.
1850.	Loew.	Bernsteinfauna, 37 (4 sp.).

5326. Dolichopus ——. (Dolichopodidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1832.	Burmeister.	Handb. ent., i : 637.
1836.	"	Man. ent., 578.

5327. Dolichopus ——. (Dolichopodidæ.)

Locality: Brunstatt, Alsatia. Horizon: Middle Oligocene.

1890.	Foerster.	In litt.

5328. Dolichopus ? —— (larva). (Dolichopodidæ.)

Locality: Sieblos, Rhenish Prussia. Horizon: Aquitanian.

1858.	Heyden.	Palaeontogr., v : 120.

5329. Dolichopus ——. (Dolichopodidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1850.	Loew.	Bernsteinfauna, 42.

5330. Dolichopus? ——. (Dolichopodidæ.)

Locality: Quesnel, British Columbia. Horizon: ——.

1877.	Scudder.	Rep. geol. surv. Can., 1875-'76: 272-273.
1877.	"	Ins. tert. Quesnel, 7-8.
1877.	"	Rapp. opér. comm. géol. Can., 1875-'76: 301.

5331. Dolichopus ——. (Dolichopodidæ.)

Locality: Green River, Wyo. Horizon: Oligocene.

1878.	Scudder.	Bull. U. S. geol. surv. terr., iv: 756.
1890.	"	Tert. ins. N. A., 562.

5332. Drapetis ——. (Empidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1850.	Loew.	Bernsteinfauna, 42.

5333. Drosophila ——. (Drosophilidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1850.	Loew.	Bernsteinfauna, 43.

5334. Echinomyia ——. (Tachinidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1868.	Smith.	Quart. journ. sc., v: 183. *Pl., fig.* 2.

5335. Echinomyia antiqua. (Tachinidæ.)

Compared with E. echinata Meig.

Locality: Oeningen, Baden. Horizon: Tortonian.

1849.	Heer.	Insektenf. tertiärg. Oeningen, ii: 247-248. *Pl.* 17, *fig.* 17.
1852.	Giebel.	Deutschl. petref., 642.
1856.	"	Insect. d. vorwelt, 198.
1865.	Heer.	Urwelt der Schweiz, 396.
1872.	"	Monde prim. Suisse, 486.
1876.	"	Prim. world Switz., ii: 55.
1879.	"	Urwelt der Schweiz, 2^e aufl., 422.

5336. Electra ——. (Xylophagidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1845.	Berendt.	Bernst. befindl. organ. reste vorw., i: 57.

5337. Electra formosa. (Xylophagidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1850.	Loew.	Bernsteinfauna, 39 (undescr.).
1856.	Giebel.	Insect. d. vorwelt, 226 (undescr.).

Elephantomyia brevipalpa. See Toxorhina brevipalpa.

Elephantomyia longirostris. See Toxorhina longirostris.

Elephantomyia pulchella. See Toxorhina pulchella.

5338. Empis ——. (Empidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1845.	Berendt.	Bernst. befindl. organ. reste vorw., i: 57.
1850.	Loew.	Bernsteinfauna, 41 (16 sp.).

5339. Empis ——. (Empidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1831. Burmeister. Oken, Isis, 1831: 2000 [1100].

5340. Empis ——. (Empidæ.)

Locality: Aix, France. Horizon: Ligurian.

1829. Curtis. Edinb. new phil. journ., vii: 296. *Pl.* 6, *fig.* 11.
1829. " Murch.-Lyell, Tert. form. Aix, 12. *Pl.* 6, *fig.* 11.
1856. Giebel. Insect. d. vorwelt, 208.
See also Protomyia livida.

5341. Empis ——. (Empidæ.)

Locality: Brunstatt, Alsatia. Horizon: Middle Oligocene.

1890. Foerster. In litt.

5342. Empis ——. (Empidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1820. Schlotheim. Petrefactenk., 43.

5343. Empis ——. (Empidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1742. Sendel. Hist. succ., 44–45 (unnamed). *Pl.* 1, *fig.* 19.
1825. Guérin. Dict. class. d'hist. nat., viii: 580.

5344. Empis ——. (Empidæ.)

Compared with E. tessellata.

Locality: Aix, France. Horizon: Ligurian.

1829. Serres. Géogn. terrains tert., 232.

5345. Empis carbonum. (Empidæ.)

Compared with E. morio.

Locality: Baireuth, Bavaria. Horizon: Miocene?.

1837. Germar. Fauna insect. Europæ, xix: 21. *Pl.* 21.
1840. ——. Verz. samml. Bayr., 71.
1852. Giebel. Deutschl. petref., 642.
1856. " Insect. d. vorwelt, 207.

5346. Empis melia. (Empidæ.)

Locality: Rott, Rhenish Prussia. Horizon: Aquitanian.

1870. L. Heyden. Foss. dipt. Rott, 23–24. *Pl.* 2, *fig.* 27.
1870. " Palaeontogr., xvii: 259–260. *Pl.* 45, *fig.* 27.
1885. Scudder. Zittel, Handb. palaeont., i, th. ii: 807. *Fig.* 1074.
1886. " Zittel-Barrois, Traité de paléont., ii: 808. *Fig.* 1091.

5347. Empis poeppigi. (Empidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1856. Giebel. Insect. d. vorwelt, 207.

5348. Empis pulvillata. (Empidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1850. Loew. Bernsteinfauna, 41.
1856. Giebel. Insect. d. vorwelt, 208.

5349. **Ephydra** ——. (Ephydridæ.)

Locality: Prussian amber. Horizon: Ligurian.

1850. Loew. Bernsteinfauna, 43.

5350. **Epicypta** —— (2 sp.). (Mycetophilidæ.)

Locality: Brunstatt, Alsatia. Horizon: Middle Oligocene.

1890. Foerster. In litt.

5351. **Epidosis incompleta.** (Cecidomyidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1850. Loew. Bernsteinfauna, 32.
1856. Giebel. Insect. d. vorwelt, 247.

5352. **Epidosis minutissima.** (Cecidomyidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1850. Loew. Bernsteinfauna, 32.
1856. Giebel. Insect. d. vorwelt, 247.

5353. **Epiplecia joannis.** (Bibionidæ.)

Locality: Corent, France. Horizon: Aquitanian.

1878. Giard. Bull. scient. dép. nord, (2), i: 13–16.
See also Protomyia joannis, etc.

5354. **Eriocera palpata.** (Tipulidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1869. Osten Sacken. Monogr. dipt. N. A., iv: 251.
See also Allarithmia palpata.

5355. **Eriocera succini.** (Tipulidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1869. Osten Sacken. Monogr. dipt. N. A., iv: 252.
See also Anisomera succini.

5356. **Erioptera** —— (14 sp.). (Tipulidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1850. Loew. Bernsteinfauna, 37.

5357. **Erioptera danæ.** (Tipulidæ.)

Locality: Rott, Rhenish Prussia. Horizon: Aquitanian.

1870. L. Heyden. Foss. dipt. Rott, 16–17. *Pl.* 2, *fig.* 22.
1870. " Palaeontogr., xvii: 252–253. *Pl.* 45, *fig.* 22.

5358. **Eriphia setosa.** (Anthomyidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1862. Giebel. Zeitschr. ges. naturw., xx: 319.

5359. **Eristalis lapideus.** (Syrphidæ.)

Locality: White River, Colo. Horizon: Oligocene.

1877. Scudder. Bull. U. S. geol. surv. terr., iii: 756.
1886. Williston. Syn. N. A. Syrphidæ, 281, 283 (probably not Eristalis).
1890. Scudder. Tert. ins. N. A., 558–559. *Pl.* 5, *figs.* 48, 49.

5360. Eupedilia ———. (Chironomidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1850. Loew. Bernsteinfauna, 30.

5361. Glaphyroptera ——— (3 sp.). (Mycetophilidæ.)

Locality: Brunstatt, Alsatia. Horizon: Middle Oligocene.

1890. Foerster. In litt.

5362. Gloma ———. (Empidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1845. Berendt. Bernst. befindl. organ. reste vorw., i: 57.
1850. Loew. Bernsteinfauna, 41 (3 sp.).

5363. Gloma acuticornis. (Empidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1850. Loew. Bernsteinfauna, 41.
1856. Giebel. Insect. d. vorwelt, 208.

5364. Gloma hirta. (Empidæ.)

Compared with G. fuscipennis.

Locality: Prussian amber. Horizon: Ligurian.

1850. Loew. Bernsteinfauna, 41.
1856. Giebel. Insect. d. vorwelt, 208.

5365. Gloma palpata. (Empidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1850. Loew. Bernsteinfauna, 41.
1856. Giebel. Insect. d. vorwelt, 208.

5366. Gnoriste ———. (Mycetophilidæ.)

Locality: Aix, France. Horizon: Ligurian.

1829. Curtis. Edinb. new phil. journ., vii: 296. *Pl.* 6, *fig.* 8.
1829. " Murchison-Lyell, Tert. form. Aix, 12. *Pl.* 6, *fig.* 8.

See also Mycetophila meigeniana, M. crassa.

5367. Gnoriste (vic.) **———.** (Mycetophilidæ.)

Locality: Green River, Wyo. Horizon: Oligocene.

1890. Scudder. Tert. ins. N. A., 597. *Pl.* 9, *fig.* 12.

See also Anaclinia ? ———.

5368. Gnoriste dentoni. (Mycetophilidæ.)

Compared with G. megarhina O. S.

Locality: White River, Utah. Horizon: Oligocene.

1877. Scudder. Bull. U. S. geol. surv. terr., iii: 755.
1890. " Tert. ins. N. A., 592–593. *Pl.* 5, *figs.* 6, 7.

5369. Habrosoma antiqua. (Xylophagidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1850. Loew. Bernsteinfauna, 39.
1856. Giebel. Insect. d. vorwelt, 204.

5370. Haploneura ——— (4 sp.). (Tipulidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1850. Loew. Bernsteinfauna, 36, 38.

5371. Helomyza ———. (Helomyzidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1850. Loew. Bernsteinfauna, 43.

5372. Helophilus primarius. (Syrphidæ.)

Locality: Vicinity Bonn, Rhenish Prussia. Horizon: Aquitanian.

1837. Germar. Fauna insect. Europæ, xix: 25. *Pl.* 25.
1852. Giebel. Deutschl. petref., 642.
1856. " Insect. d. vorwelt, 201–202.

5373. Hemerodromia ———. (Empidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1831. Burmeister. Oken, Isis, 1831: 1100.

5374. Hemerodromia ——— (3 sp.). (Empidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1850. Loew. Bernsteinfauna, 41.

5375. Heteromyza detecta. (Helomyzidæ.)

Locality: White River, Colo. Horizon: Oligocene.

1877. Scudder. Bull. U. S. geol. surv. terr., iii: 758–759.
1890. " Tert. ins. N. A., 548. *Pl.* 5, *fig.* 76.

5376. Heteromyza senilis. (Helomyzidæ.)

Locality: Quesnel, British Columbia. Horizon: ———.

1877. Scudder. Rep. geol. surv. Can., 1875–76: 275.
1877. " Ins. tert. Quesnel, 10.
1877. " Rapp. opér. comm. géol. Can., 1875–76: 304–305.
1890. " Tert. ins. N. A., 547. *Pl.* 3, *figs.* 1, 2.

5377. Heterotricha hirta. (Mycetophilidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1850. Loew. Bernsteinfauna, 34.
1856. Giebel. Insect. d. vorwelt, 232.

5378. Hexatoma ? œningensis. (Tabanidæ.)

Locality: Oeningen, Baden. Horizon: Tortonian.

1865. Heer. Urwelt der Schweiz, 396. *Fig.* 321 on *p.* 394.
1872. " Monde prim. Suisse, 486. *Fig.* 321 on *p.* 484.
1876. " Prim. world Switz., ii: 55. *Fig.* 321 on *p.* 54.
1879. " Urwelt der Schweiz, 2^e^ aufl., 422. *Fig.* 363 on *p.* 420.
1885. Scudder. Zittel, Handb. palaeont., i, th. ii: 808. *Fig.* 1078.
1886. " Zittel-Barrois, Traité de paléont., ii: 809. *Fig.* 1095.

5379. Hilarites bellus. (Empidæ.)

Locality: Aix, France. Horizon: Ligurian.

1856. Heer. Viert. naturf. gesellsch. Zürich, i: 38. *Pl.* 2, *fig.* 5.

5380. **Hirtea** ———. (Bibionidæ.)
Compared with H. funebris.
Locality: Aix, France. Horizon: Ligurian.
1829. Serres. Géogn. terrains tert., 231.
See also Bibio ——— Burm., 1: 639.

5381. **Hirtea** ———. (Bibionidæ.)
Compared with H. johannis.
Locality: Aix, France. Horizon: Ligurian.
1829. Serres. Géogn. terrains tert., 231.
See also Bibio ——— Burm., 1: 639.

5382. **Hirtea** ———. (Bibionidæ.)
Compared with H. febrilis.
Locality: Aix, France. Horizon: Ligurian.
1829. Serres. Géogn. terrains tert., 232.
See also Bibio ——— Burm., 1: 639.

Holopogon pilipes. See Dasypogon pilipes.

5383. **Hybos** ———. (Empidæ.)
Locality: Prussian amber. Horizon: Ligurian.
1845. Berendt. Bernst. befindl. organ. reste vorw., i: 57.
1850. Loew. Bernsteinfauna, 41 (2 sp.).

5384. **Lasioptera** ———. (Cecidomyidæ.)
Locality: Prussian amber. Horizon: Ligurian.
1832. Burmeister. Handb. ent., i: 637.
1836. " Man. ent., 578.

5385. **Lasioptera recessa.** (Cecidomyidæ.)
Localities: White River, Colorado and Utah. Horizon: Oligocene.
1877. Scudder. Bull. U. S. geol. surv. terr., iii: 745–746.
1890. " Tert. ins. N. A., 600. *Pl.* 5, *figs.* 29–31.

Leia ———. See Leja ———.

5386. **Leja** ———. (Mycetophilidæ.)
Locality: Prussian amber. Horizon: Ligurian.
1832. Burmeister. Handb. ent., i: 637 (Leia).
1836. " Man. ent., 578 (Leia).

5387. **Leja frequens.** (Mycetophilidæ.)
Locality: Prussian amber. Horizon: Ligurian.
1850. Loew. Bernsteinfauna, 34 (undescr.).
1856. Giebel. Insect. d. vorwelt, 232 (undescr.).

5388. **Leja interrupta.** (Mycetophilidæ.)
Locality: Prussian amber. Horizon: Ligurian.
1850. Loew. Bernsteinfauna, 34.
1856. Giebel. Insect. d. vorwelt, 232.

5389. Leja platypus. (Mycetophilidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1850. Loew. Bernsteinfauna, 34.
1856. Giebel. Insect. d. vorwelt, 232.

5390. Leptis ———. (Leptidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1845. Berendt. Bernst. befindl. organ. reste vorw., i: 57.
1850. Loew. Bernsteinfauna, 40 (5 sp.).

5391. Leptis ———. (Leptidæ.)

Compared with L. aurata.

Locality: Prussian amber. Horizon: Ligurian.

1832. Burmeister. Handb. ent., i: 636.
1836. " Man. ent., 578.

5392. Leptis ———. (Leptidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1868. Smith. Quart. journ. sc., v: 183. *Pl., fig.* 1.

5393. Leptogaster hellii. (Asilidæ.)

Locality: Radoboj, Croatia. Horizon: Mayencian.

1841. Unger. Verhandl. leop.-carol. akad. naturf., xix: 428. *Pl.* 72, *fig.* 8.
1841. " Foss. insecten, 16. *Pl.* 72, *fig.* 8.
1849. Heer. Insektenf. tertiärg. Oeningen, ii: 241–242. *Pl.* 17, *fig.* 10.
1850. " Neue denkschr. schweiz. gesellsch. wiss., xi: 241–242. *Pl.* 17, *fig.* 10.
1852. Giebel. Deutschl. petref., 612.
1856. " Insect. d. vorwelt, 212–213.
1885. Scudder. Zittel, Handb. palaeont., i, th. ii: 808. *Fig.* 1077.
1886. " Zittel-Barrois, Traité de paléont., ii: 809. *Fig.* 1094.

5394. Leptopeza ———. (Empidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1845. Berendt. Bernst. befindl. organ. reste vorw., i: 57.
1850. Loew. Bernsteinfauna, 41 (3 sp.).

5395. Leptopeza clavipes. (Empidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1850. Loew. Bernsteinfauna, 41.
1856. Giebel. Insect. d. vorwelt, 208.

5396. Limnobia ——— (several). (Tipulidæ.)

Compared with L. pulchella.

Locality: Prussian amber. Horizon: Ligurian.

1832. Burmeister. Handb. ent., i: 637.
1836. " Man. ent., 578.

5397. Limnobia ———. (Tipulidæ.)

Locality: Aix, France. Horizon: Ligurian.

1829. Curtis. Edinb. new phil. journ., vii: 296. *Pl.* 6, *fig.* 7.
1829. " Murchison-Lyell, Tert. form. Aix, 12. *Pl.* 6, *fig.* 7.

See also Limnobia murchisoni, L. curtisi.

5398. Limnobia cingulata. (Tipulidæ.)

Locality: Radoboj, Croatia. Horizon: Mayencian.

1849. Heer. Insektenf. tertiärg. Oeningen, ii: 199–200. *Pl.* 15, *fig.* 8.
1852. Giebel. Deutschl. petref., 640.
1856. " Insect. d. vorwelt, 244–245.

5399. Limnobia curtisi. (Tipulidæ.)

Locality: Aix, France. Horizon: Ligurian.

1856. Giebel. Insect. d. vorwelt, 245.
See also Limnobia ——— Curtis, etc.

5400. Limnobia debilis. (Tipulidæ.)

Locality: Radoboj, Croatia. Horizon: Mayencian.

1849. Heer. Insektenf. tertiärg. Oeningen, ii: 201. *Pl.* 15, *fig.* 11.
1852. Giebel. Deutschl. petref., 640.
1856. " Insect. d. vorwelt, 245.

5401. Limnobia deleta. (Tipulidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1856. Giebel. Insect. d. vorwelt, 246.

5402. Limnobia extincta. (Tipulidæ.)

Locality: Radoboj, Croatia. Horizon: Mayencian.

1868. Loew. Zeitschr. ges. naturw., xxxii: 190–191.
See also Rhipidia extincta.

5403. Limnobia formosa. (Tipulidæ.)

Locality: (Oeningen?, Baden). Horizon: Tortonian.

1849. Heer. Insektenf. tertiärg. Oeningen, ii: 198–199. *Pl.* 15, *fig.* 7.
1852. Giebel. Deutschl. petref., 640.
1856. " Insect. d. vorwelt, 244.

5404. Limnobia furcata. (Tipulidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1856. Giebel. Insect. d. vorwelt, 245–246.

5405. Limnobia jaccardi. (Tipulidæ.)

Locality: (Locle?, Switzerland). Horizon: Tortonian.

1865. Heer. Urwelt der Schweiz. *Fig.* 320 on *p.* 394.
1872. " Monde prim. Suisse. *Fig.* 320 on *p.* 484.
1876. " Prim. world Switz., ii. *Fig.* 320 on *p.* 54.
1879. " Urwelt der Schweiz, 2^{e} aufl. *Fig.* 362 on *p.* 420.

5406. Limnobia murchisoni. (Tipulidæ.)

Locality: Aix, France. Horizon: Ligurian.

1856. Heer. Viert. naturf. gesellsch. Zürich, i: 30–31. *Pl.* 2, *fig.* 12.
See also Limnobia ——— Curtis, etc.

5407. Limnobia picta. (Tipulidæ.)

Locality: Radoboj, Croatia. Horizon: Mayencian.

1868. Loew. Zeitschr. ges. naturw., xxxii: 190–191.
See also Rhipidia picta.

5408. Limnobia propinqua. (Tipulidæ.)

Locality: Radoboj, Croatia. Horizon: Mayencian.

1868. Loew. Zeitschr. ges. naturw., xxxii: 190–191.
See also Rhipidia propinqua.

5409. Limnobia sturi. (Tipulidæ.)

Locality: Rott, Rhenish Prussia. Horizon: Aquitanian.

1870. L. Heyden. Foss. dipt. Rott, 17–19. *Pl.* 2, *fig.* 23.
1870. " Palaeontogr., xvii: 253–255. *Pl.* 45, *fig.* 23.

5410. Limnobia tenuis. (Tipulidæ.)

Locality: Radoboj, Croatia. Horizon: Mayencian.

1849. Heer. Insektenf. tertiärg. Oeningen, ii: 200. *Pl.* 15, *fig.* 9.
1852. Giebel. Deutschl. petref., 640.
1856. " Insect. d. vorwelt, 245.

5411. Limnobia vetusta. (Tipulidæ.)

Locality: Radoboj, Croatia. Horizon: Mayencian.

1849. Heer. Insektenf. tertiärg. Oeningen, ii: 200–201. *Pl.* 15, *fig.* 10.
1852. Giebel. Deutschl. petref., 640.
1856. " Insect. d. vorwelt, 245.

Limnobiorhynchus brevipalpus. See Toxorhina brevipalpa.

Limnobiorhynchus longirostris. See Toxorhina longirostris.

Limnobiorhynchus pulchellus. See Toxorhina pulchella.

5412. Lithomyza condita. (Cecidomyidæ.)

Localities: White River, Colo. Horizon: Oligocene.

1877. Scudder. Bull. U. S. geol. surv. terr., iii: 746.
1885. " Zittel, Handb. palaeont., i, th. ii: 812. *Fig.* 1089.
1886. " Zittel-Barrois, Traité de paléont., ii: 813. *Fig.* 1106.
1890. " Tert. ins. N. A., 601. *Pl.* 5, *figs.* 34–36.

5413. Lithophysa tumulata. (Stratiomyidæ.)

Locality: Green River, Wyo. Horizon: Oligocene.

1890. Scudder. Tert. ins. N. A., 566–567. *Pl.* 9, *fig.* 31.

5414. Lithortalis picta. (Ortalidæ.)

Locality: Quesnel, British Columbia. Horizon: ———.

1877. Scudder. Rep. progr. geol. surv. Can., 1875–'76: 277.
1877. " Ins. tert. Quesnel, 7.
1877. " Rapp. opér. comm. géol. Can., 1875–'76: 306–307.
1890. " Tert. ins. N. A., 541. *Pl.* 3, *figs.* 10, 16.

5415. Lomatia gracilis. (Bombylidæ.)

Compared with L. elongata and L. sabæa.

Locality: Prussian amber. Horizon: Ligurian.

1862. Giebel. Zeitschr. ges. naturw., xx: 318–319.

5416. Lonchæa senescens. (Lonchæidæ.)

Compared with L. vaginalis Fall.

Locality: Quesnel, British Columbia. Horizon: ——.

1877. Scudder. Rep. progr. geol. surv. Can., 1875–'76: 277–278.
1877. " Ins. tert. Quesn., 12–13.
1877. " Rapp. opér. comm. géol. Can., 1875–'76: 307.
1890. " Tert. ins. N. A., 539. *Pl.* 3, *fig.* 18.

5417. Macrocera —— (6 sp.). (Mycetophilidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1850. Loew. Bernsteinfauna, 35.

5418. Macrochile ——. (Tipulidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1845. Berendt. Bernst. befindl. organ. reste vorw., i: 57.

5419. Macrochile spectrum. (Tipulidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1850. Loew. Bernsteinfauna, 37 (undescr.).
1856. Giebel. Insect. d. vorwelt, 242 (undescr.).

5420. Macroura ——. (Mycetophilidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1845. Berendt. Bernst. befindl. organ. reste vorw., i: 57.

5421. Medeterus ——. (Dolichopodidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1845. Berendt. Bernst. befindl. organ. reste vorw., i: 57.
1859. Loew. Bernsteinfauna, 42.

5422. Medeterus ——. (Dolichopodidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1832. Burmeister. Handb. ent., i: 637.
1836. " Man. ent., 578.

5423. Medeterus frauenfeldi. (Dolichopodidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1856. Giebel. Insect. d. vorwelt, 205–206.

5424. Merodon germari. (Syrphidæ.)

Locality: Rott, Rhenish Prussia. Horizon: Aquitanian.

1862. Heyden. Palaeontogr., x: 78–79. *Pl.* 10, *fig.* 5.

5425. Microdon ——. (Syrphidæ.)

Locality: Aix, France. Horizon: Ligurian.

1832. Burmeister. Handb. ent., i: 639.
1836. " Man. ent., 580.
See also Aphritis ——.

5426. Milesia quadrata. (Syrphidæ.)

Locality: Green River, Wyo. Horizon: Oligocene.

1878. Scudder. Bull. U. S. geol. surv. terr., iv: 752–753.
1886. Williston. Syn. N. A. Syrphidæ, 281, 283 (probably not Milesia).
1890. Scudder. Tert. ins. N. A., 557–558. *Pl.* 9, *fig.* 13.
See also ——— ——— (Syrphidæ) Scudder, 1870.

5427. Mochlonyx ———. (Culicidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1845. Berendt. Bernst. befindl. organ. reste vorw., i: 57.

5428. Mochlonyx atavus. (Culicidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1861. Loew. Dipt. fauna bernstein, 8.
1861. " Ber. versamml. deutsch. naturf., xxxv: 95.
1869. " Amber diptera, 11.
See also Loew, Bernsteinfauna, 29 (1850).

5429. Monodicrana terminalis. (Cecidomyidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1850. Loew. Bernsteinfauna, 32.
1856. Giebel. Insect. d. vorwelt, 247.

5430. Musca ———. (Muscidæ.)

Locality: Copal. Horizon: Recent.

1776. Bloch. Beschäft. berl. gesellsch. naturf. freunde, ii: 166–167. *Pl.* 3, *fig.* 4.

5431. Musca ———. (Muscidæ.)

Locality: Copal. Horizon: Recent.

1776. Bloch. Beschäft. berl. gesellsch. naturf. freunde, ii: 171–172. *Pl.* 4, *fig.* 10.

5432. Musca ———. (Muscidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1831. Burmeister. Oken, Isis, 1831: 1100.
1832. " Handb. ent., i: 636.
1836. " Man. ent., 578.

5433. Musca ———. (Muscidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1820. Schlotheim. Petrefactenk., 43.

5434. Musca ———. (Muscidæ.)

Locality: White River, Colo. Horizon: Oligocene.

1877. Scudder. Bull. U. S. geol. surv. terr., iii: 757.
1890. " Tert. ins. N. A., 553. *Pl.* 5, *figs.* 106, 108.

5435. Musca ———. (Muscidæ.)

Locality: White River, Colo. Horizon: Oligocene.

1890. Scudder. Tert. ins. N. A., 554. *Pl.* 5, *figs.* 80, 81, 99, 100.

5416. Lonchæa senescens. (Lonchæidæ.)

Compared with L. vaginalis Fall.

Locality: Quesnel, British Columbia. Horizon: ——.

1877.	Scudder.	Rep. progr. geol. surv. Can., 1875–'76: 277–278.
1877.	"	Ins. tert. Quesn., 12–13.
1877.	"	Rapp. opér. comm. géol. Can., 1875–'76: 307.
1890.	"	Tert. ins. N. A., 539. *Pl.* 3, *fig.* 18.

5417. Macrocera —— (6 sp.). (Mycetophilidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1850.	Loew.	Bernsteinfauna, 35.

5418. Macrochile ——. (Tipulidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1845.	Berendt.	Bernst. befindl. organ. reste vorw., i: 57.

5419. Macrochile spectrum. (Tipulidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1850.	Loew.	Bernsteinfauna, 37 (undescr.).
1856.	Giebel.	Insect. d. vorwelt, 242 (undescr.).

5420. Macroura ——. (Mycetophilidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1845.	Berendt.	Bernst. befindl. organ. reste vorw., i: 57.

5421. Medeterus ——. (Dolichopodidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1845.	Berendt.	Bernst. befindl. organ. reste vorw., i: 57.
1859.	Loew.	Bernsteinfauna, 42.

5422. Medeterus ——. (Dolichopodidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1832.	Burmeister.	Handb. ent., i: 637.
1836.	"	Man. ent., 578.

5423. Medeterus frauenfeldi. (Dolichopodidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1856.	Giebel.	Insect. d. vorwelt, 205–206.

5424. Merodon germari. (Syrphidæ.)

Locality: Rott, Rhenish Prussia. Horizon: Aquitanian.

1862.	Heyden.	Palaeontogr., x: 78–79. *Pl.* 10, *fig.* 5.

5425. Microdon ——. (Syrphidæ.)

Locality: Aix, France. Horizon: Ligurian.

1832.	Burmeister.	Handb. ent., i: 639.
1836.	"	Man. ent., 580.

See also Aphritis ——.

5426. **Milesia quadrata.** (Syrphidæ.)

Locality: Green River, Wyo. Horizon: Oligocene.
1878. Scudder. Bull. U. S. geol. surv. terr., iv: 752–753.
1886. Williston. Syn. N. A. Syrphidæ, 281, 283 (probably not Milesia).
1890. Scudder. Tert. ins. N. A., 557–558. *Pl.* 9, *fig.* 13.
See also ——— ——— (Syrphidæ) Scudder, 1870.

5427. **Mochlonyx** ———. (Culicidæ.)

Locality: Prussian amber. Horizon: Ligurian.
1845. Berendt. Bernst. befindl. organ. reste vorw., i: 57.

5428. **Mochlonyx atavus.** (Culicidæ.)

Locality: Prussian amber. Horizon: Ligurian.
1861. Loew. Dipt. fauna bernstein, 8.
1861. " Ber. versamml. deutsch. naturf., xxxv: 95.
1869. " Amber diptera, 11.
See also Loew, Bernsteinfauna, 29 (1850).

5429. **Monodicrana terminalis.** (Cecidomyidæ.)

Locality: Prussian amber. Horizon: Ligurian.
1850. Loew. Bernsteinfauna, 32.
1856. Giebel. Insect. d. vorwelt, 247.

5430. **Musca** ———. (Muscidæ.)

Locality: Copal. Horizon: Recent.
1776. Bloch. Beschäft. berl. gesellsch. naturf. freunde, ii: 166–167. *Pl.* 3, *fig.* 4.

5431. **Musca** ———. (Muscidæ.)

Locality: Copal. Horizon: Recent.
1776. Bloch. Beschäft. berl. gesellsch. naturf. freunde, ii: 171–172. *Pl.* 4, *fig.* 10.

5432. **Musca** ———. (Muscidæ.)

Locality: Prussian amber. Horizon: Ligurian.
1831. Burmeister. Oken, Isis, 1831: 1100.
1832. " Handb. ent., i: 636.
1836. " Man. ent., 578.

5433. **Musca** ———. (Muscidæ.)

Locality: Prussian amber. Horizon: Ligurian.
1820. Schlotheim. Petrefactenk., 43.

5434. **Musca** ———. (Muscidæ.)

Locality: White River, Colo. Horizon: Oligocene.
1877. Scudder. Bull. U. S. geol. surv. terr., iii: 757.
1890. " Tert. ins. N. A., 553. *Pl.* 5, *figs.* 106, 108.

5435. **Musca** ———. (Muscidæ.)

Locality: White River, Colo. Horizon: Oligocene.
1890. Scudder. Tert. ins. N. A., 554. *Pl.* 5, *figs.* 80, 81, 99, 100.

5436. Musca ——. (Muscidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1829. Serres. Géogn. terrains tert., 242.

5437. Musca ascarides. (Muscidæ.)

Locality: White River, Colo. Horizon: Oligocene.

1877. Scudder. Bull. U. S. geol. surv. terr., iii: 756–757.
1890. " Tert. ins. N. A., 551–552. *Pl.* 5, *figs.* 74, 75, 79, 82–87, 98, 101.

5438. Musca bibosa. (Muscidæ.)

Locality: White River, Colo. Horizon: Oligocene.

1877. Scudder. Bull. U. S. geol. surv. terr., iii: 757.
1890. " Tert. ins. N. A., 552. *Pl.* 5, *fig.* 73.

5439. Musca cellaris. (Muscidæ.)

Locality: Copal. Horizon: Recent.

1776. Bloch. Beschäft. berl. gesellsch. naturf. freunde, ii: 173. *Pl.* 4, *fig.* 12.

5440. Musca hydropica. (Muscidæ.)

Locality: White River, Colo. Horizon: Oligocene.

1877. Scudder. Bull. U. S. geol. surv. terr., iii: 757–758.
1890. " Tert. ins. N. A., 553–554. *Pl.* 5, *figs.* 72, 92, 93, 107.

5441. Musca longipes. (Muscidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1822. Presl. Deliciæ pragenses, i: 206.

5442. Musca meridiana. (Muscidæ.)

Locality: Copal. Horizon: Recent.

1776. Bloch. Beschäft. berl. gesellsch. naturf. freunde, ii: 184. *Pl.* 5, *fig.* 24.

5443. Musca pilosa. (Muscidæ.)

Locality: Copal. Horizon: Recent.

1776. Bloch. Beschäft. berl. gesellsch. naturf. freunde, ii: 176. *Pl.* 4, *fig.* 16.
1776. " Beschäft. berl. gesellsch. naturf. freunde, ii: 184–185. *Pl.* 5, *fig.* 26.

5444. Musca resinosa. (Muscidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1822. Presl. Deliciæ pragenses, i: 207.

5445. Musca roralis. (Muscidæ.)

Locality: Copal. Horizon: Recent.

1776. Bloch. Beschäft. berl. gesellsch. naturf. freunde, ii: 170–171. *Pl.* 3, *fig.* 9.

5446. Musca setosa. (Muscidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1822. Presl. Deliciæ pragenses, i: 205.

5447. Musca venosa. (Muscidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1822. Presl. Deliciæ pragenses, i: 203–204.

5448. Musca vinculata. (Muscidæ.)

Locality: White River, Colo. Horizon: Oligocene.

1877. Scudder. Bull. U. S. geol. surv. terr., iii: 758.
1890. " Tert. ins. N. A., 554. *Pl.* 5, *fig.* 77.

5449. Muscaria ——. (Muscidæ.)

Locality: ——. Horizon: ——.

1846. Giebel. Paläozool., 278.

5450. Muscidites deperditus. (Muscidæ.)

Locality: Nieder-Flörsheim in Rhein-Hessen. Horizon: Aquitanian ?.

1866. Heyd.-Heyd. Palaeontogr., xv: 29. *Pl.* 23, *fig.* 22.
1866. " Käfer u. polypen, 29. *Pl.* 2, *fig.* 22.

5451. Mycetobia —— (4 sp.). (Mycetophilidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1850. Loew. Bernsteinfauna, 35.

5452. Mycetobia defectiva. (Mycetophilidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1850. Loew. Bernsteinfauna, 35.

5453. Mycetophila ——. (Mycetophilidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1845. Berendt. Bernst. befindl. organ. reste vorw., i: 57.
1850. Loew. Bernsteinfauna, 34 (23 sp.).

5454. Mycetophila ——. (Mycetophilidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1831. Burmeister. Oken, Isis, 1831: 1100.
1832. " Handb. ent., i: 637.
1836. " Man. ent., 578.

5455. Mycetophila ——. (Mycetophilidæ.)

Locality: Aix, France. Horizon: Ligurian.

1829. Curtis. Edinb. new phil. journ., vii: 296. *Pl.* 6, *fig.* 9.
1829. " Murchison-Lyell, Tert. form. Aix, 12. *Pl.* 6, *fig.* 9.
1839. Mantell. Wonders of geology, i: 248. *Fig.* 2.
1854. " Medals of creation, 2d ed., ii: 558. *Fig.* 183.2.

See also Mycetophilia morio, M. dubia.

5456. Mycetophila —— (2 or 3 sp.). (Mycetophilidæ.)

Locality: Brunstatt, Alsatia. Horizon: Middle Oligocene.

1889. Foerster. Mitth. comm. geol. Elsass-Lothr., ii: 103.

5457. Mycetophila ——. (Mycetophilidæ.)

Locality: Auvergne, France. Horizon: Aquitanian.

1870. Oustalet. Ann. sc. geol., ii, art. 3: 153–154. *Pl.* 3, *fig.* 18.

5458. Myoetophila amoena. (Mycetophilidæ.)

Locality: Radoboj, Croatia. Horizon: Mayencian.

1849. Heer. Insektenf. tertiärg. Oeningen, ii: 203. *Pl.* 15, *fig.* 14.
1852. Giebel. Deutschl. petref., 641.
1856. " Insect. d. vorwelt, 233.

5459. Mycetophila antiqua. (Mycetophilidæ.)

Locality: Radoboj, Croatia. Horizon: Mayencian.

1849. Heer. Insektenf. tertiärg. Oeningen, ii: 203–205. *Pl.* 11, *fig.* 15e; *pl.* 15, *figs.* 15, 15*b*.
1852. Giebel. Deutschl. petref., 641.
1856. " Insect. d. vorwelt, 233.

5460. Mycetophila compressa. (Mycetophilidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1850. Loew. Bernsteinfauna, 34.
1856. Giebel. Insect. d. vorwelt, 234.

5461. Mycetophila crassa. (Mycetophilidæ.)

Locality: Aix, France. Horizon: Ligurian.

1856. Giebel. Insect. d. vorwelt, 234.
See also Gnoriste —— Curtis, etc.

5462. Mycetophila dubia. (Mycetophilidæ.)

Locality: Aix, France. Horizon: Ligurian.

1856. Giebel. Insect. d. vorwelt, 234.
See also Mycetophila —— Curtis, etc.

5463. Mycetophila latipennis. (Mycetophilidæ.)

Locality: Radoboj, Croatia. Horizon: Mayencian.

1849. Heer. Insektenf. tertiärg. Oeningen, ii: 205–206. *Pl.* 15, *fig.* 17.
1852. Giebel. Deutschl. petref., 641.
1856. " Insect. d. vorwelt, 234.

5464. Mycetophila leptocera. (Mycetophilidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1850. Loew. Bernsteinfauna, 34.
1856. Giebel. Insect. d. vorwelt, 234.

5465. Mycetophila macrostyla. (Mycetophilidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1850. Loew. Bernsteinfauna, 34.
1856. Giebel. Insect. d. vorwelt, 234.

5466. Mycetophila meigeniana. (Mycetophilidæ.)

Localities: Aix, France; Radoboj, Croatia. Horizons: Ligurian, Mayencian.

1856. Heer. Viert. naturf. gesellsch. Zürich, i: 32.
See also Gnoriste —— Curtis, etc.

5467. Mycetophila morio. (Mycetophilidæ.)

Locality: Aix, France. Horizon: Ligurian.

1856. Heer. Viert. naturf. gesellsch. Zürich, i: 32.
See also Mycetophila ——— Curtis, etc.

5468. Mycetophila nana. (Mycetophilidæ.)

Locality: Radoboj, Croatia. Horizon: Mayencian.

1849. Heer. Insektenf. tertiärg. Oeningen, ii: 202–203. *Pl.* 15, *fig.* 13.
1852. Giebel. Deutschl. petref., 641.
1856. " Insect. d. vorwelt, 233.

5469. Mycetophila nigritella. (Mycetophilidæ.)

Locality: Radoboj, Croatia. Horizon: Mayencian.

1849. Heer. Insektenf. tertiärg. Oeningen, ii: 205. *Pl.* 15, *fig.* 16.
1852. Giebel. Deutschl. petref., 641.
1856. " Insect. d. vorwelt, 233.

5470. Mycetophila occultata. (Mycetophilidæ.)

Locality: White River, Colo. Horizon: Oligocene.

1877. Scudder. Bull. U. S. geol. surv. terr., iii: 753.
1890. " Tert. ins. N. A., 588–589. *Pl.* 5, *figs.* 44, 45, 54, 55.

5471. Mycetophila orci. (Mycetophilidæ.)

Locality: Oeningen, Baden. Horizon: Tortonian.

1865. Heer. Urwelt der Schweiz. *Fig.* 317 on *p.* 394.
1872. " Monde prim. Suisse. *Fig.* 317 on *p.* 484.
1876. " Prim. world Switz., ii. *Fig.* 317 on *p.* 54.
1879. " Urwelt der Schweiz, 2^{e} aufl. *Fig.* 359 on *p.* 420.

5472. Mycetophila pallipes. (Mycetophilidæ.)

Locality: Aix, France. Horizon: Ligurian.

1856. Heer. Viert. naturf. gesellsch. Zürich, i: 31. *Pl.* 2, *fig.* 3.

5473. Mycetophila pulchella. (Mycetophilidæ.)

Locality: Radoboj, Croatia. Horizon: Mayencian.

1849. Heer. Insektenf. tertiärg. Oeningen, ii: 201–202. *Pl.* 15, *fig.* 12.
1852. Giebel. Deutschl. petref., 641.
1856. " Insect. d. vorwelt, 232–233.

5474. Mycetophila pulvillata. (Mycetophilidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1850. Loew. Bernsteinfauna, 34.
1856. Giebel. Insect. d. vorwelt, 234.

5475. Mycetophila pumilio. (Mycetophilidæ.)

Locality: Radoboj, Croatia. Horizon: Mayencian.

1849. Heer. Insektenf. tertiärg. Oeningen, ii: 206. *Pl.* 15, *fig.* 18.
1852. Giebel. Deutschl. petref., 641.
1856. " Insect. d. vorwelt, 234.

5476. Mycetophila pusillima. (Mycetophilidæ.)

Locality: Oeningen, Baden. Horizon: Tortonian.

1865. Heer. Urwelt der Schweiz. *Fig.* 318 on *p.* 394.
1872. " Monde prim. Suisse. *Fig.* 318 on *p.* 484.
1876. " Prim. world Switz., ii. *Fig.* 318 on *p.* 54.
1879. " Urwelt der Schweiz, 2e aufl. *Fig.* 360 on *p.* 420.

5477. Mycetophilites ———. (Mycetophilidæ.)

Locality: Brunstatt, Alsatia. Horizon: Middle Oligocene.

1890. Foerster. In litt.

5478. Myiolepta (vic.) ———. (Syrphidæ.)

Locality: Florissant, Colo. Horizon: Oligocene.

1886. Williston. Syn. N. A. Syrphidæ, 282.

5479. Nemestrina ———. (Nemestrinidæ.)

Compared with N. recticulata.

Locality: Aix, France. Horizon: Ligurian.

1829. Serres. Géogn. terrains tert., 232.

5480. Nemotelus ———. (Stratiomyidæ.)

Locality: Aix, France. Horizon: Ligurian.

1829. Serres. Géogn. terrains tert., 232.

5481. Nephrotoma ———. (Tipulidæ.)

Compared with N. dorsalis.

Locality: Aix, France. Horizon: Ligurian.

1829. Serres. Géogn. terrains tert., 231.

5482. Oochtera ———. (Ephydridæ.)

Compared with O. mantis.

Locality: Aix, France. Horizon: Ligurian.

1829. Serres. Géogn. terrains tert., 233.

5483. Odontomyia herichsonii. (Stratiomyidæ.)

Locality: Aix, France. Horizon: Ligurian.

1847. Hope. Descr. ins. foss., 7. *Pl.*, *fig.* 5.

5484. Œstrus ———. (Œstridæ.)

Locality: Prussian amber. Horizon: Ligurian.

1830. Berendt. Insecten im bernstein, 34.

5485. Œstrus ———. (Œstridæ.)

Locality: ———. Horizon: ———.

1846. Giebel. Palaeozool, 278.

5486. Oxycera ———. (Stratiomyidæ.)

Locality: Aix, France. Horizon: Ligurian.

1829. Serres. Géogn. terrains tert., 232.

5487. Palembolus florigerus. (Nemestrinidæ.)

Locality: Florissant, Colo. Horizon: Oligocene.

1878. Scudder. Bull. U. S. geol. surv. terr., iv: 528–529.
1885. " Zittel, Handb. palaeont., i, th. ii: 808. *Fig.* 1076.
1886. " Zittel-Barrois, Traité de paléont., ii: 809. *Fig.* 1093.
1890. Lesley. Dict. foss. Penns., ii: 591. *Fig.*

5488. Palloptera morticina. (Lonchæidæ.)

Locality: Quesnel, British Columbia. Horizon: ———.

1877. Scudder. Rep. progr. geol. surv. Can., 1875–'76: 278.
1877. " Ins. tert. Quesnel, 13.
1877. " Rapp. opér. comm. géol. Can., 1875–'76: 307–308.
1890. " Tert. ins. N. A., 540. *Pl.* 3, *fig.* 15.

5489. Penthetria (vic.) ———. (Bibionidæ.)

Compared with P. holosericea.

Locality: Aix, France. Horizon: Ligurian.

1829. Curtis. Edinb. new phil. journ. mag., vii: 296. *Pl.* 6, *fig.* 10.
1829. " Murchison-Lyell, Tert. form. Aix, 12.
1839. Mantell. Wonders of geology, i: 228. *Fig.* 4.

5490. Penthetria (vic.) ———. (Bibionidæ.)

Compared with P. holosericea.

Locality: Krottensee, Bohemia. Horizon: Aquitanian.

1852. Kollar. Reuss, Abhandl. k.-k. geol. reichsanst., i: 58. *Fig.* 20.

5491. Penthetria ———. (Bibionidæ.)

Locality: Aix, France. Horizon: Ligurian.

1854. Mantell. Medals of creation, 2d ed., ii: 558. *Fig.* 183.4.

5492. Penthetria ———. (Bibionidæ.)

Campared with P. funebris.

Locality: Aix, France. Horizon: Ligurian.

1829. Serres. Géogn. terrains tert., 231.

5493. Penthetria brevicollis. (Bibionidæ.)

Locality: Radoboj, Croatia. Horizon: Mayencian.

1868. Loew. Zeitschr. ges. naturw., xxxii: 186–189.
See also Bibiopsis brevicollis.

5494. Penthetria cimicoides. (Bibionidæ.)

Locality: Radoboj, Croatia. Horizon: Mayencian.

1868. Loew. Zeitschr. ges. naturw., xxxii: 186–189.
See also Bibiopsis cimicoides.

5495. Penthetria murchisoni. (Bibionidæ.)

Locality: Radoboj, Croatia. Horizon: Mayencian.

1868. Loew. Zeitschr. ges. naturw., xxxii: 186–189.
See also Bibiopsis murchisoni, etc.

5496. Penthetria similkameena. (Bibionidæ.)

Locality: Similkameen River, British Columbia. Horizon: ——.

1879. Scudder. Rept. progr. geol. surv. Can., 1877–'78: B 177–179.
1879. " Ins. tert. Nicola, 2–4.
See also Plecia similkameena.

5497. Penthetria vaillantii. (Bibionidæ.)

Locality: Corent, France. Horizon: Aquitanian.

1870. Oustalet. Ann. sc. géol., ii, art. 3: 112–113. *Pl.* 3, *figs.* 1, 2.

5498. Phalænomyia ——. (Psychodidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1845. Berendt. Bernst. befindl. organ. reste vorw., i: 57.

5499. Phalænomyia —— (9 sp.). (Psychodidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1850. Loew. Bernsteinfauna, 31 (description of genus only).
1856. Giebel. Insect. d. vorwelt, 248–249.

5500. Phora ——. (Phoridæ.)

Locality: Prussian amber. Horizon: Ligurian.

1845. Berendt. Bernst. befindl. organ. reste vorw., i: 57.
1850. Loew. Bernsteinfauna, 44 (11 sp.).

5501. Phthiria dubia. (Bombylidæ.)

Locality: Vicinity Bonn, Rhenish Prussia. Horizon: Aquitanian.

1837. Germar. Fauna insect. Europæ, xix: 24. *Pl.* 24.
1852. Giebel. Deutschl. petref., 642.
See also Bibio dubius.

5502. Pipiza ——. (Syrphidæ.)

Locality: Florissant, Colo. Horizon: Oligocene.

1886. Williston. Syn. N. A. Syrphidæ, 282.

5503. Pipiza venilia. (Syrphidæ.)

Locality: Rott, Rhenish Prussia. Horizon: Aquitanian.

1870. L. Heyden. Foss. dipt. Rott, 24–25. *Pl.* 2, *fig.* 28.
1870. " Palaeontogr., xvii: 260–261. *Pl.* 45, *fig.* 28.

5504. Pipunculus ——. (Pipunculidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1845. Berendt. Bernst. befindl. organ. reste vorw., i: 57.

5505. Pipunculus succini. (Pipunculidæ.)

Compared with P. auctus.

Locality: Prussian amber. Horizon: Ligurian.

1850. Loew. Bernsteinfauna, 42.
1856. Giebel. Insect. d. vorwelt, 206.

5506. Platyura ———. (Mycetophilidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1845. Berendt. Bernst. befindl. organ. reste vorw., i: 57.
1850. Loew. Bernsteinfauna, 35 (16 sp.).

5507. Platyura ———. (Mycetophilidæ.)

Compared with P. cingulata.

Locality: Aix, France. Horizon: Ligurian.

1829. Serres. Géogn. terrains tert., 231.

5508. Platyura conjuncta. (Mycetophilidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1850. Loew. Bernsteinfauna, 35.
1856. Giebel. Insect. d. vorwelt, 237.

5509. Platyura ehrhardti. (Mycetophilidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1850. Loew. Bernsteinfauna, 35.
1856. Giebel. Insect. d. vorwelt, 237.

5510. Plecia ———. (Bibionidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1845. Berendt. Bernst. befindl. organ. reste vorw., i: 57.
1850. Loew. Bernsteinfauna, 39 (2 sp.).

5511. Plecia ——— (12 sp.). (Bibionidæ.)

Locality: Brunstatt, Alsatia. Horizon: Middle Oligocene.

1890. Foerster. In litt.

5512. Plecia affinis. (Bibionidæ.)

Locality: Oeningen, Baden. Horizon: Tortonian.

1868. Loew. Zeitschr. ges. naturw., xxxii: 184–186.
See also Protomyia affinis.

5513. Plecia amœna. (Bibionidæ.)

Locality: Oeningen, Baden. Horizon: Tortonian.

1868. Loew. Zeitschr. ges. naturw., xxxii: 184–186.
See also Protomyia amœna.

5514. Plecia anthracina. (Bibionidæ.)

Locality: Radoboj, Croatia. Horizon: Mayencian.

1868. Loew. Zeitschr. ges. naturw., xxxii: 184–186.
See also Protomyia anthracina.

5515. Plecia blanchardi. (Bibionidæ.)

Locality: Corent, France. Horizon: Aquitanian.

1878. Brongniart. Bull. sc. dép. nord, (2), i: 75.
1878. " Bull. séances soc. ent. France, 1878, No. 6: 61.
1878. " Ann. soc. ent. France, (5), viii: 48.
See also Protomyia blanchardi.

5516. Plecia bucklandi. (Bibionidæ.)

Localities: Radoboj, Croatia; Aix, France. Horizons: Mayencian, Ligurian.

1868. Loew. Zeitschr. ges. naturw., xxxii: 184–186.

See also Protomyia bucklandi, etc.

5517. Plecia dejecta. (Bibionidæ.)

Locality: Green River, Wyo. Horizon: Oligocene.

1890. Scudder. Tert. ins. N. A., 586. *Pl.* 10, *fig.* 17.

5518. Plecia edwardsii. (Bibionidæ.)

Locality: Corent, France. Horizon: Aquitanian.

1878. Brongniart. Bull. sc. dép. nord, (2), i: 75–76.
1878. " Bull. séances soc. ent. France, 1878, No. 6: 61.
1878. " Ann. soc. ent. France, (5), viii: 48.

See also Bibio edwardsii.

5519. Plecia ? heroica. (Bibionidæ.)

Locality: Rott, Rhenish Prussia. Horizon: Aquitanian.

1866. Heyd.-Heyd. Palaeontogr., xiv: 29. *Pl.* 8, *fig.* 16.

5520. Plecia hilaris. (Bibionidæ.)

Locality: Oeningen, Baden. Horizon: Tortonian.

1849. Heer. Insektenf. tertiärg. Oeningen, ii: 211. *Pl.* 17, *fig.* 6.
1852. Giebel. Deutschl. petref., 641.
1856. " Insect. d. vorwelt, 227–228.
1865. Heer. Urwelt der Schweiz, 396. *Fig.* 313 on *p.* 394.
1868. Loew. Zeitschr. ges. naturw., xxxii: 183–184.
1872. Heer. Monde prim. Suisse, 485. *Fig.* 313 on *p.* 484.
1876. " Prim. world Switz., ii: 55. *Fig.* 313 on *p.* 54.
1879. " Urwelt der Schweiz, 2^{e} aufl., 421. *Fig.* 355 on *p.* 420.

5521. Plecia joannis. (Bibionidæ.)

Locality: Corent, France. Horizon: Aquitanian.

1878. Brongniart. Bull. sc. dép. nord, (2), i: 75.
1878. " Bull. séances soc. ent. France, 1878, No. 6: 61.
1878. " Ann. soc. ent. France, (5), viii: 48.

See also Protomyia joannis, etc.

5522. Plecia jucunda. (Bibionidæ.)

Localities: Oeningen, Baden; Parschlug, Styria. Horizon: Tortonian.

1868. Loew. Zeitschr. ges. naturw. xxxii: 184–186.

See also Protomyia jucunda, etc.

5523. Plecia jucunda parschlugiana. (Bibionidæ.)

Locality: Parschlug, Styria. Horizon: Miocene.

1868. Loew. Zeitschr. ges. naturw., xxxii: 184–186.

See also Protomyia jucunda, etc.

5524. Plecia lapidaria. (Bibionidæ.)

Locality: Rott, Rhenish Prussia. Horizon: Aquitanian.

1878. Brongniart. Bull. séances soc. ent. France, 1878, No. 6: 61.
1878. " Ann. soc. ent. France, (5), viii: 48.

See also Protomyia lapidaria.

5525. Plecia larteti. (Bibionidæ.)

Locality: Corent, France. Horizon: Aquitanian.

1878. Brongniart. Bull. sc. dép. nord, (2), i: 75.
1878. " Bull. séances soc. ent. France, 1878, No. 6: 61.
1878. " Ann. soc. ent. France, (5), viii: 48.
See also Bibio larteti.

5526. Plecia latipennis. (Bibionidæ.)

Locality: Radoboj, Croatia. Horizon: Mayencian.

1868. Loew. Zeitschr. ges. naturw., xxxii: 184–186.
See also Protomyia latipennis.

5527. Plecia longa. (Bibionidæ.)

Locality: Radoboj, Croatia. Horizon: Mayencian.

1868. Loew. Zeitschr. ges. naturw., xxxii: 184–186.
See also Protomyia longa.

5528. Plecia lugubris. (Bibionidæ.)

Locality: Radoboj, Croatia. Horizon: Mayencian.

1849. Heer. Insektenf. tertiärg. Oeningen, ii: 209–211. *Pl.* 14, *fig.* 20.
1852. Giebel. Deutschl. petref., 641.
1856. " Insect. d. vorwelt, 227.
1868. Loew. Zeitschr. ges. naturw., xxxii: 183.

5529. Plecia lygæoides. (Bibionidæ.)

Localities: Radoboj, Croatia; Aix, France. Horizons: Mayencian, Ligurian.

1868. Loew. Zeitschr. ges. naturw., xxxii: 184–186.
See also Bibio lignarius, etc.

5530. Plecia major. (Bibionidæ.)

Locality: Corent, France. Horizon: Aquitanian.

1870. Oustalet. Ann. sc. géol., ii, art. 3: 114–115. *Pl.* 2, *fig.* 19; *pl.* 3, *figs.* 3, 4.

5531. Plecia nigrescens. (Bibionidæ.)

Compared with P. funebris, P. velutina, Brazil.

Locality: Corent, France. Horizon: Aquitanian.

1870. Oustalet. Ann. sc. géol., ii, art. 3: 115–117. *Pl.* 3, *figs.* 5–10.

5532. Plecia oustaleti. (Bibionidæ.)

Locality: Auvergne, France. Horizon: Aquitanian.

1878. Brongniart. Bull. sc. dép. nord, (2), i: 75–80.
1878. " Bull. séances soc. ent. France, 1878, No. 6: 60–61.
1878. Giard. Bull. sc. dép. nord, (2), i: 12–16.
See also Protomyia oustaleti.

5533. Plecia pallida. (Bibionidæ.)

Locality: Corent, France. Horizon: Aquitanian.

1870. Oustalet. Ann. sc. géol., ii, art. 3: 118–119. *Pl.* 3, *figs.* 11–13.

Plecia parschlugiana. See Plecia jucunda parschlugiana.

5534. Plecia pealei. (Bibionidæ.)

Locality: Twin Creek, Wyo. Horizon: Oligocene.

1890. Scudder. Tert. ins. N. A., 585–586. *Pl.* 4, *figs.* 2, 3, 10–12.

5535. Plecia quæsita. (Bibionidæ.)

Locality: Krottensee, Bohemia. Horizon: Aquitanian.

1877. Novák. Sitzungsb. k. akad. wiss. Wien, lxxvi: 86–87. *Pl.* 2, *fig.* 5.

1877. " Fauna egerer tertiärb., 16–17 *Pl.* 2, *fig.* 5.

5536. Plecia rhenana. (Bibionidæ.)

Locality: Rott, Rhenish Prussia. Horizon: Aquitanian.

1865. Heyd.-Heyd. Palaeontogr., xiv: 28–29. *Pl.* 9, *fig.* 9.

5537. Plecia sauvagei. (Bibionidæ.)

Locality: Corent, France. Horizon: Aquitanian.

1878. Brongniart. Bull. sc. dép. nord, (2), i: 75.

1878. " Bull. séances soc. ent. France, 1878, No. 6: 61.

1878. " Ann. soc. ent. France, (5), viii: 48.

See also Protomyia sauvagei.

5538. Plecia similkameena. (Bibionidæ.)

Locality: British Columbia. Horizon: ———.

1885. Scudder. Zittel, Handb. palaeont., i, th. ii: 811. *Fig.* 1086.

1886. " Zittel-Barrois, Traité de paléont., ii: 812. *Fig.* 1103.

1886. " Bull. U. S. geol. surv., No. 31: 92.

1890. " Tert. ins. N. A., 583–585. *Pl.* 3, *figs.* 20–22.

See also Penthetria similkameena.

5539. Poliomyia recta. (Conopidæ.)

Locality: Green River, Wyo. Horizon: Oligocene.

1878. Scudder. Bull. U. S. geol. surv. terr., iv: 755.

1885. " Zittel, Handb. palaeont., i, th. ii: 807. *Fig.* 1072.

1886. " Zittel-Barrois, Traité de paléont., ii: 807. *Fig.* 1089.

1890. " Tert. ins. N. A., 556–557. *Pl.* 9, *figs.* 19, 21.

5540. Porphyrops ———. (Dolichopodidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1845. Berendt. Bernst. befindl. organ. reste vorw., i: 57.

1850. Loew. Bernsteinfauna, 42.

5541. Porphyrops ———. (Dolichopodidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1832. Burmeister. Handb. ent., i: 637.

1836. " Man. ent., 578.

5542. Porphyrops ———. (Dolichopodidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1870. Giebel. Zeitschr. ges. naturw., (2), i: 87.

5543. Posthon ———. (Psychodidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1845. Berendt. Bernst. befindl. organ. reste vorw., i: 57.

5544. Posthon gracilis. (Psychodidæ.)

Locality: Prussian amber. **Horizon:** Ligurian.

1850.	Loew.	Bernsteinfauna, art.
1856.	Giebel.	Insect. d. vorw
		lobular

5545. Pronophlebia rediviva. (Tipulidæ.)

Locality: White River, Colorado or Utah. **Horizon:** Oligocene.

1878.	Scudder.	Bull. U. S. geol. surv. terr., iii: 750–751.
1890.	"	Tert. ins. N. A., 574. *Pl.* 5, *fig.* 39.

5546. Protomyia ——— (2 or 3 sp.). (Bibionidæ.)

Locality: Brunstatt, Alsatia. **Horizon:** Middle Oligocene.

1888.	Foerster.	Mitth. comm. geol. Elsass-Lothr., i: 164.
1889.	"	Mitth. comm. geol. Elsass-Lothr., ii: 103.

5547. Protomyia abava. (Bibionidæ.)

Locality: Rott, Rhenish Prussia. **Horizon:** Aquitanian.

1865.	Heyd.-Heyd.	Palaeontogr., xiv: 20–21. *Pl.* 8, *figs.* 2 *A*, *B*.

5548. Protomyia adusta. (Bibionidæ.)

Locality: Corent, France. **Horizon:** Aquitanian.

1870.	Oustalet.	Ann. sc. géol., ii, art. 3: 145–146. *Pl.* 5, *fig.* 18.

5549. Protomyia affinis. (Bibionidæ.)

Locality: Oeningen, Baden. **Horizon:** Tortonian.

1849.	Heer.	Insektenf. tertiärg. Oeningen, ii: 235–236. *Pl.* 17, *fig.* 3.
1852.	Giebel.	Deutschl. petref., 642.
1853–'56.	Bronn.	Lethæa geogn., 3e aufl., iii: 641. *Pl.* 42′, *figs.* 13*a–d*.
1856.	Giebel.	Insect. d. vorwelt, 224–225.

See also Plecia affinis.

5550. Protomyia amœna. (Bibionidæ.)

Locality: Oeningen, Baden. **Horizon:** Tortonian.

1849.	Heer.	Insektenf. tertiärg. Oeningen, ii: 237. *Pl.* 17, *fig.* 4.
1852.	Giebel.	Deutschl. petref., 642.
1856.	"	Insect. d. vorwelt, 225.

See also Plecia amœna.

Protomyia antenata. See Protomyia antennata.

5551. Protomyia antennata. (Bibionidæ.)

Locality: Rott, Rhenish Prussia. **Horizon:** Aquitanian.

1865.	Heyd.-Heyd.	Palaeontogr., xiv: 26 (antenata). *Pl.* 8, *fig.* 9.

5552. Protomyia anthracina. (Bibionidæ.)

Locality: Radoboj, Croatia. **Horizon:** Mayencian.

1849.	Heer.	Insektenf. tertiärg. Oeningen, ii: 236–237. *Pl.* 16, *fig.* 21.
1852.	Giebel.	Deutschl. petref., 642.
1856.	"	Insect. d. vorwelt, 225.

See also Plecia anthracina.

5553. Protomyia blanchardi. (Bibionidæ.)

Locality: Corent, France. **Horizon:** Aquitanian.

1870. Oustalet. Ann. sc. géol., ii, art. 3: 148–149. *Pl.* 6, *fig.* 5.
See also Plecia blanchardi.

5554. Protomyia bohemica. (Bibionidæ.)

Locality: Krottensee, Bohemia. **Horizon:** Aquitanian.

1877. Novák. Sitzungsb. k. akad. wiss. Wien, lxxvi: 86. *Pl.* 2, *fig.* 2.
1877. " Fauna egerer tertiärb., 16. *Pl.* 2, *fig.* 2.

5555. Protomyia brevipennis. (Bibionidæ.)

Locality: Aix, France. **Horizon:** Ligurian.

1856. Heer. Viert. naturf. gesellsch. Zürich, i: 35. *Pl.* 2, *fig.* 1.

5556. Protomyia bucklandi. (Bibionidæ.)

Localities: Radoboj, Croatia; Aix, France. **Horizons:** Ligurian, Mayencian.

1849. Heer. Insektenf. tertiärg. Oeningen, ii: 238–239 (buklandi). *Pl.* 16, *fig.* 22.
1852. Giebel. Deutschl. petref., 642.
1856. " Insect. d. vorwelt, 225.
1856. Heer. Viert. naturf. gesellsch. Zürich, i: 35.
1876. Brongniart. Bull. soc. géol. France, (3), iv: 459–460. *Pl.* 13, *fig.* 7.
See also Bibio ——— Buckland, Plecia bucklandi.

Protomyia buklandi. See Protomyia bucklandi.

Protomyia collossea. See Protomyia colossea.

5557. Protomyia colossea. (Bibionidæ.)

Locality: Rott, Rhenish Prussia. **Horizon:** Aquitanian.

1865. Heyd.-Heyd. Palaeontogr., xiv: 21 (collossea). *Pl.* 8, *fig.* 3.

5558. Protomyia elegans. (Bibionidæ.)

Locality: Aix, France. **Horizon:** Ligurian.

1856. Heer. Viert. naturf. gesellsch. Zürich, i: 36.
See also ——— ——— (Bibionidæ) Curtis.

5559. Protomyia elongata. (Bibionidæ.)

Locality: Rott, Rhenish Prussia. **Horizon:** Aquitanian.

1855. Heyd.-Heyd. Palaeontogr., xiv: 27–28. *Pl.* 8, *fig.* 14.

5560. Protomyia exposititia. (Bibionidæ.)

Locality: Rott, Rhenish Prussia. **Horizon:** Aquitanian.

1865. Heyd.-Heyd. Palaeontogr., xiv: 24. *Pl.* 9, *figs.* 7–8.
1870. L. Heyden. Foss. dipt. Rott, 29.
1870. " Palaeontogr., xvii: 265.

5561. Protomyia formicoides. (Bibionidæ.)

Locality: Corent, France. **Horizon:** Aquitanian.

1870. Oustalet. Ann. sc. géol., ii, art. 3: 150–151. *Pl.* 4, *fig.* 18; *pl.* 5, *fig.* 19.

5562. Protomyia fusca. (Bibionidæ.)

Locality: Corent, France. Horizon: Aquitanian.

1870. Oustalet. Ann. sc. géol., ii, art. 3: 145. *Pl.* 4, *fig.* 15.

5563. Protomyia globularis. (Bibionidæ.)

Locality: Corent, France. Horizon: Aquitanian.

1870. Oustalet. Ann. sc. géol., ii, art. 3: 147–148. *Pl.* 6, *fig.* 7.

5564. Protomyia gracilenta. (Bibionidæ.)

Locality: Rott, Rhenish Prussia. Horizon: Aquitanian.

1865. Heyd.-Heyd. Palaeontogr., xiv: 28. *Pl.* 9, *fig.* 12.

5565. Protomyia gracilis. (Bibionidæ.)

Locality: Aix, France. Horizon: Ligurian.

1856. Heer. Viert. naturf. gesellsch. Zürich, i: 36. *Pl.* 2, *fig.* 2*a*.

5566. Protomyia grandæva. (Bibionidæ.)

Locality: Rott, Rhenish Prussia. Horizon: Aquitanian.

1865. Heyd.-Heyd. Palaeontogr., xiv: 25–26. *Pl.* 8, *figs.* 17–18.
1870. L. Heyden. Foss. dipt. Rott, 29.
1870. " Palaeontogr., xvii: 265.

5567. Protomyia grossa. (Bibionidæ.)

Compared with P. winnertzii Heyd., Aquitanian.

Locality: Rott, Rhenish Prussia. Horizon: Aquitanian.

1865. Heyd.-Heyd. Palaeontogr., xiv: 22. *Pl.* 8, *fig.* 5.

5568. Protomyia heeri. (Bibionidæ.)

Locality: Rott, Rhenish Prussia. Horizon: Aquitanian.

1865. Heyd.-Heyd. Palaeontogr., xiv: 28. *Pl.* 8, *fig.* 15.

5569. Protomyia hypogæa. (Bibionidæ.)

Locality: Rott, Rhenish Prussia. Horizon: Aquitanian.

1865. Heyd.-Heyd. Palaeontogr., xiv: 23. *Pl.* 9, *figs.* 10–11.

5570. Protomyia incerta. (Bibionidæ.)

Locality: Corent, France. Horizon: Aquitanian.

1870. Oustalet. Ann. sc. géol., ii, art. 3: 151–152. *Pl.* 1, *fig.* 16*d*; *pl.* 5, *figs.* 20, 21.

5571. Protomyia inflata. (Bibionidæ.)

Locality: Corent, France. Horizon: Aquitanian.

1870. Oustalet. Ann. sc. géol., ii, art. 3: 142. *Pl.* 5, *fig.* 17.

5572. Protomyia joannis. (Bibionidæ.)

Locality: Corent, France. Horizon: Aquitanian.

1870. Oustalet. Ann. sc. géol., ii, art. 3: 143–144. *Pl.* 6, *figs.* 4, 14 (*bis*).
1876. Brongniart. Bull. soc. géol. France, (3), iv: 459–460. *Pl.* 13, *fig.* 8.
See also Epiplecia joannis, Plecia joannis.

5573. Protomyia jucunda. (Bibionidæ.)

Localities: Oeningen, Baden; Parschlug, Styria. Horizon: Tortonian.

1849. Heer. Insektenf. tertiärg. Oeningen, ii: 234–235. *Pl.* 17, *fig.* 2.
1852. Giebel. Deutschl. petref., 642.
1853–'56. Bronn. Lethæa geogn. 3ᵉ aufl., iii: 641. *Pl.* 42', *fig.* 14.
1856. Giebel. Insect. d. vorwelt, 224.

See also Protomyia jucunda parschlugiana, Plecia jucunda, Plecia jucunda parschlugiana.

5574. Protomyia jucunda parschlugiana. (Bibionidæ.)

Locality: Parschlug, Styria. Horizon: Tortonian.

1849. Heer. Insektenf. tertiärg. Oeningen, ii: 235. *Pl.* 17, *figs.* 2*a–g*.

See also Protomyia jucunda, etc.

5575. Protomyia lapidaria. (Bibionidæ.)

Locality: Rott, Rhenish Prussia. Horizon: Aquitanian.

1865. Heyd.-Heyd. Palaeontogr., xiv: 25. *Pl.* 9, *fig.* 6.
1870. L. Heyden. Foss. dipt. Rott, 29.
1870. " Palaeontogr., xvii: 265.

See also Plecia lapidaria.

5576. Protomyia latipennis. (Bibionidæ.)

Locality: Radoboj, Croatia. Horizon: Mayencian.

1849. Heer. Insektenf. tertiärg. Oeningen, ii: 237–238. *Pl.* 17, *fig.* 5.
1852. Giebel. Deutschl. petref., 642.
1856. " Insect. d. vorwelt, 225.

See also Plecia latipennis.

5577. Protomyia lignaria. (Bibionidæ.)

Locality: Rott, Rhenish Prussia. Horizon: Aquitanian.

1865. Heyd.-Heyd. Palaeontogr., xiv: 29–30.

See also Bibio lignarius, etc.

5578. Protomyia livida. (Bibionidæ.)

Locality: Aix, France. Horizon: Ligurian.

1849. Heer. Insektenf. tertiärg. Oeningen, ii: 239.
1856. " Viert. naturf. gesellsch. Zürich, i: 35.
1856. Giebel. Insect. d. vorwelt, 226.

See also Empis ——— Curtis.

5579. Protomyia longa. (Bibionidæ.)

Localities: Radoboj, Croatia; Corent, France. Horizons: Mayencian, Aquitanian.

1849. Heer. Insektenf. tertiärg. Oeningen, ii: 233–234. *Pl.* 16, *fig.* 20.
1852. Giebel. Deutschl. petref., 642.
1853–'56. Bronn. Lethæa geogn., 3ᵉ aufl., iii: 641. *Pl.* 42', *figs.* 12*ab*.
1856. Giebel. Insect. d. vorwelt, 224.
1870. Oustalet. Ann. sc. géol., ii, art. 3: 139–140. *Pl.* 5, *fig.* 16.

See also Plecia longa.

5580. Protomyia longipennis. (Bibionidæ.)

Locality: Corent, France. Horizon: Aquitanian.

1870. Oustalet. Ann. sc. géol., ii, art. 3: 141. *Pl.* 6, *fig.* 1.

5581. Protomyia luctuosa. (Bibionidæ.)

Locality: Rott, Rhenish Prussia. Horizon: Aquitanian.

1865. Heyd.-Heyd. Palaeontogr., xiv: 22. *Pl.* 8, *fig.* 6.
1870. L. Heyden. Foss. dipt. Rott, 29.
1870. " Palaeontogr., xvii: 265.

5582. Protomyia lugens. (Bibionidæ.)

Locality: Corent, France. Horizon: Aquitanian.

1870. Oustalet. Ann. sc. géol. ii, art. 3: 142–143. *Pl.* 6, *figs.* 2, 3.

5583. Protomyia luteola. (Bibionidæ.)

Locality: Rott, Rhenish Prussia. Horizon: Aquitanian.

1865. Heyd.-Heyd. Palaeontogr., xiv: 26–27. *Pl.* 8, *fig.* 11.

5584. Protomyia lygæoides. (Bibionidæ.)

Localities: Radoboj, Croatia; Aix, France. Horizon: Mayencian, Ligurian.

1849. Heer. Insektenf. tertiärg. Oeningen, ii: 232–233. *Pl.* 17, *fig.* 1.
1852. Giebel. Deutschl. petref., 642.
1856. " Insect. d. vorwelt, 223–224.
1856. Heer. Viert. naturf. gesellsch. Zürich, i: 35.
See also Bibio lignarius, etc.

5585. Protomyia macrocephala. (Bibionidæ.)

Locality: Rott, Rhenish Prussia. Horizon: Aquitanian.

1865. Heyd.-Heyd. Palaeontogr., xiv: 23. *Pl.* 8, *fig.* 8.
1870. L. Heyden. Foss. dipt. Rott, 29.
1870. " Palaeontogr., xvii: 265.

5586. Protomyia matheroni. (Bibionidæ.)

Locality: Aix, France. Horizon: Ligurian.

1861. Heer. Saporta, Heer, Rech. climat pays tert., 153 (undescr.).

5587. Protomyia oustaleti. (Bibionidæ.)

Locality: Chadrat, Auvergne, France. Horizon: Aquitanian.

1876. Brongniart. Bull. soc. géol. Fr., (3), iv: 459–460. *Pl.* 13, *figs.* 5–8.
1876. " Ann. sc. géol., vii, art. 4: 1–2.
See also Plecia oustaleti.

Protomyia parschlugiana. See Protomyia jucunda parschlugiana.

5588. Protomyia pinguis. (Bibionidæ.)

Locality: Rott, Rhenish Prussia. Horizon: Aquitanian.

1865. Heyd.-Heyd. Palaeontogr., xiv: 24. *Pl.* 9, *figs.* 4–5.

5589. Protomyia proserpina. (Bibionidæ.)

Locality: Rott, Rhenish Prussia. Horizon: Aquitanian.

1865. Heyd.-Heyd. Palaeontogr., xiv: 22-23. *Pl.* 8, *fig.* 7.

5590. Protomyia rubescens. (Bibionidæ.)

Locality: Corent, France. Horizon: Aquitanian.

1870. Oustalet. Ann. sc. géol., ii, art. 3: 149–150. *Pl.* 4, *figs.* 16, 17.

5591. Protomyia sauvagei. (Bibionidæ.)

Locality: Corent, France. Horizon: Aquitanian.

1870. Oustalet. Ann. sc. géol., ii, art. 3: 146-147. *Pl.* 6, *fig.* 6.
See also Plecia sauvagei.

5592. Protomyia schineri. (Bibionidæ.)

Locality: Rott, Rhenish Prussia. Horizon: Aquitanian.

1865. Heyd.-Heyd. Palaeontogr., xiv: 27. *Pl.* 8, *figs.* 12, 13.

5593. Protomyia speciosa. (Bibionidæ.)

Locality: Oeningen, Baden. Horizon: Tortonian.

1865. Heer. Urwelt der Schweiz, 395. *Fig.* 312 on *p.* 394.
1872. " Monde prim. Suisse, 485. *Fig.* 312 on *p.* 484.
1876. " Prim. world Switz., ii: 55. *Fig.* 312 on *p.* 54.
1879. " Urwelt der Schweiz, 2ᵉ aufl, 421. *Fig.* 354 on *p.* 420.

5594. Protomyia stygia. (Bibionidæ.)

Locality: Rott, Rhenish Prussia. Horizon: Aquitanian.

1865. Heyd.-Heyd. Palaeontogr., xiv: 24. *Pl.* 9, *figs.* 1-3.
1870. L. Heyden. Foss. dipt. Rott, 29.
1870. " Palaeontogr., xvii: 265.

5595. Protomyia veterana. (Bibionidæ.)

Locality: Rott, Rhenish Prussia. Horizon: Aquitanian.

1865. Heyd.-Heyd. Palaeontogr., xiv: 25. *Pl.* 8, *fig.* 10.

5596. Protomyia volgeri. (Bibionidæ.)

Locality: Rott, Rhenish Prussia. Horizon: Aquitanian.

1865. Heyd.-Heyd. Palaeontogr., xiv: 29-30.
See also Bibiopsis volgeri.

5597. Protomyia winnertzi. (Bibionidæ.)

Compared with P. latipennis Heer, Radoboj.

Locality: Rott, Rhenish Prussia. Horizon: Aquitanian.

1865. Heyd.-Heyd. Palaeontogr., xiv: 21-22. *Pl.* 8, *fig.* 4.
1870. L. Heyden. Foss. dipt. Rott, 29.
1870. " Palaeontogr., xviii: 265.

5598. Psila ——. (Psilidæ.)

Locality: Oeningen, Baden. Horizon: Tortonian.

1888. Schöberlin. Soc. entom., iii: 68.

5599. Psilites bella. (Psilidæ.)

Locality: Radoboj, Croatia. Horizon: Mayencian.

1849. Heer. Insektenf. tertiärg. Oeningen, ii: 250-252. *Pl.* 17, *fig.* 16.
1852. Giebel. Deutschl. petref., 643.
1856. " Insect. d. vorwelt, 196.
1885. Scudder. Zittel, Handb. palaeont., i, th. ii: 806. *Fig.* 1070.
1886. " Zittel-Barrois, Traité de paléont., ii: 807. *Fig.* 1087.

5600. Psilopus ——. (Dolichopodidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1850. Loew. Bernsteinfauna, 42.

5601. Psilota tabidosa. (Syrphidæ.)

Locality: Green River, Wyo. Horizon: Oligocene.

1890. Scudder. Tert. ins. N. A., 561–562. *Pl.* 9, *fig.* 9.

5602. Psychoda ——. (Psychodidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1845. Berendt. Bernst. befindl. organ. reste vorw., i: 57.

5603. Psychoda ——. (Psychodidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1832. Burmeister. Handb. ent., i: 637.
1836. " Man. ent., 578.

5604. Psychoda oxyptera. (Psychodidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1850. Loew. Bernsteinfauna, 31.
1856. Giebel. Insect. d. vorwelt, 248.

5605. Ptychoptera deleta. (Tipulidæ.)

Locality: Krottensee, Bohemia. Horizon: Aquitanian.

1877. Novák. Sitzungsb. k. akad. wiss. Wien., lxxvi: 88–89. *Pl.* 2, *fig.* 1.
1877. " Fauna egerer tertiärb., 18–19. *Pl.* 2, *fig.* 1.

5606. Pulex ——. (Pulicidæ.)

Locality: Aix, France. Horizon: Ligurian.

1834. Keferstein. Naturg. erdkörp., ii: 336 (two species as of Serres; but Serres merely says: "Peut-être des Aptères de l'ordre des Suceurs." Cf. Walck. and Gervais, Apt. iv: 356. Pictet in the first edition of his Traité de paléontologie (1846) makes the same reference as Keferstein, but omits it in the second).

5607. Rhamphidia ——. (Tipulidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1845. Berendt. Bernst. befindl. organ. reste vorw., i: 57.
1850. Loew. Bernsteinfauna, 37 (4 sp.).

5608. Rhamphidia minuta. (Tipulidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1850. Loew. Bernsteinfauna, 37.
1856. Giebel. Insect. d. vorwelt, 242.

5609. Rhamphidia pulchra. (Tipulidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1850. Loew. Bernsteinfauna, 37.
1856. Giebel. Insect. d. vorwelt, 242.

5591. **Protomyia sauvagei.** (Bibionidæ.)

Locality: Corent, France. Horizon: Aquitanian.

1870. Oustalet. Ann. sc. géol., ii, art. 3: 146–147. *Pl.* 6, *fig.* 6.
See also Plecia sauvagei.

5592. **Protomyia schineri.** (Bibionidæ.)

Locality: Rott, Rhenish Prussia. Horizon: Aquitanian.

1865. Heyd.-Heyd. Palaeontogr., xiv: 27. *Pl.* 8, *figs.* 12, 13.

5593. **Protomyia speciosa.** (Bibionidæ.)

Locality: Oeningen, Baden. Horizon: Tortonian.

1865. Heer. Urwelt der Schweiz, 395. *Fig.* 312 on *p.* 394.
1872. " Monde prim. Suisse, 485. *Fig.* 312 on *p.* 484.
1876. " Prim. world Switz., ii: 55. *Fig.* 312 on *p.* 54.
1879. " Urwelt der Schweiz, 2e aufl, 421. *Fig.* 354 on *p.* 420.

5594. **Protomyia stygia.** (Bibionidæ.)

Locality: Rott, Rhenish Prussia. Horizon: Aquitanian.

1865. Heyd.-Heyd. Palaeontogr., xiv: 24. *Pl.* 9, *figs.* 1–3.
1870. L. Heyden. Foss. dipt. Rott, 29.
1870. " Palaeontogr., xvii: 265.

5595. **Protomyia veterana.** (Bibionidæ.)

Locality: Rott, Rhenish Prussia. Horizon: Aquitanian.

1865. Heyd.-Heyd. Palaeontogr., xiv: 25. *Pl.* 8, *fig.* 10.

5596. **Protomyia volgeri.** (Bibionidæ.)

Locality: Rott, Rhenish Prussia. Horizon: Aquitanian.

1865. Heyd.-Heyd. Palaeontogr., xiv: 29–30.
See also Bibiopsis volgeri.

5597. **Protomyia winnertzi.** (Bibionidæ.)

Compared with P. latipennis Heer, Radoboj.

Locality: Rott, Rhenish Prussia. Horizon: Aquitanian.

1865. Heyd.-Heyd. Palaeontogr., xiv: 21–22. *Pl.* 8, *fig.* 4.
1870. L. Heyden. Foss. dipt. Rott, 29.
1870. " Palaeontogr., xviii: 265.

5598. **Psila** ———. (Psilidæ.)

Locality: Oeningen, Baden. Horizon: Tortonian.

1888. Schöberlin. Soc. entom., iii: 68.

5599. **Psilites bella.** (Psilidæ.)

Locality: Radoboj, Croatia. Horizon: Mayencian.

1849. Heer. Insektenf. tertiärg. Oeningen, ii: 250–252. *Pl.* 17, *fig.* 16.
1852. Giebel. Deutschl. petref., 643.
1856. " Insect. d. vorwelt, 196.
1885. Scudder. Zittel, Handb. palaeont., i, th. ii: 806. *Fig.* 1070.
1886. " Zittel-Barrois, Traité de paléont., ii: 807. *Fig.* 1087.

5600. Psilopus ——. (Dolichopodidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1850. Loew. Bernsteinfauna, 42.

5601. Psilota tabidosa. (Syrphidæ.)

Locality: Green River, Wyo. Horizon: Oligocene.

1890. Scudder. Tert. ins. N. A., 561–562. *Pl.* 9, *fig.* 9.

5602. Psychoda ——. (Psychodidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1845. Berendt. Bernst. befindl. organ. reste vorw., i: 57.

5603. Psychoda ——. (Psychodidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1832. Burmeister. Handb. ent., i: 637.
1836. " Man. ent., 578.

5604. Psychoda oxyptera. (Psychodidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1850. Loew. Bernsteinfauna, 31.
1856. Giebel. Insect. d. vorwelt, 248.

5605. Ptychoptera deleta. (Tipulidæ.)

Locality: Krottensee, Bohemia. Horizon: Aquitanian.

1877. Novák. Sitzungsb. k. akad. wiss. Wien., lxxvi: 88–89. *Pl.* 2, *fig.* 1.
1877. " Fauna egerer tertiärb., 18–19. *Pl.* 2, *fig.* 1.

5606. Pulex ——. (Pulicidæ.)

Locality: Aix, France. Horizon: Ligurian.

1834. Keferstein. Naturg. erdkörp., ii: 336 (two species as of Serres; but Serres merely says: "Peut-être des Aptères de l'ordre des Suceurs." Cf. Walck. and Gervais, Apt. iv: 356. Pictet in the first edition of his Traité de paléontologie (1846) makes the same reference as Keferstein, but omits it in the second).

5607. Rhamphidia ——. (Tipulidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1845. Berendt. Bernst. befindl. organ. reste vorw., i: 57.
1850. Loew. Bernsteinfauna, 37 (4 sp.).

5608. Rhamphidia minuta. (Tipulidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1850. Loew. Bernsteinfauna, 37.
1856. Giebel. Insect. d. vorwelt, 242.

5609. Rhamphidia pulchra. (Tipulidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1850. Loew. Bernsteinfauna, 37.
1856. Giebel. Insect. d. vorwelt, 242.

5610. Rhaphium ——. (Dolichopodidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1832. Burmeister. Handb. ent., i: 637.
1836. " Man. ent., 578.

5611. Rhaphium ——. (Dolichipodidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1850. Loew. Bernsteinfauna, 42.

5612. Rhamphomyia ——. (Empidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1845. Berendt. Bernst. befindl. organ. reste vorw., i: 57 (**Rumphomyia**).
1850. Loew. Bernsteinfauna, 41 (21 sp.).

5613. Rhamphomyia antipedalis. (Empidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1850. Loew. Bernsteinfauna, 41 (undescr.).
1856. Giebel. Insect. d. vorwelt, 208 (undescr.).

5614. Rhamphomyia crinitarsis. (Empidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1850. Loew. Bernsteinfauna, 41.
1856. Giebel. Insect. d. vorwelt, 208.

5615. Rhamphomyia distans. (Empidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1850. Loew. Bernsteinfauna, 41.
1856. Giebel. Insect. d. vorwelt, 208.

5616. Rhamphomyia formosa. (Empidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1850. Loew. Bernsteinfauna, 41 (undescr.).
1856. Giebel. Insect. d. vorwelt, 208 (undescr.).

5617. Rhamphomyia pteropa. (Empidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1850. Loew. Bernsteinfauna, 41 (undescr.).
1856. Giebel. Insect. d. vorwelt, 208 (undescr.).

5618. Rhamphomyia ptilopa. (Empidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1850. Loew. Bernsteinfauna, 41 (undescr.).
1856. Giebel. Insect. d. vorwelt, 208 (undescr.).

5619. Rhamphomyia remitarsis. (Empidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1850. Loew. Bernsteinfauna, 41 (undescr.).
1856. Giebel. Insect. d. vorwelt, 208 (undescr.).

5620. Rhamphomyia ungulina. (Empidæ.)

Locality: Prussian amber Horizon: Ligurian.

1850. Loew. Bernsteinfauna, 41.
1856. Giebel. Insect. d. vorwelt, 208.

5621. Rhingia ——. (Syrphidæ.)

Locality: Aix, France. Horizon: Ligurian.

1847. Hope. Trans. ent. soc. Lond., iv: 252.

5622. Rhingia ——. (Syrphidæ.)

Locality: Florissant, Colo. Horizon: Oligocene.

1886. Williston. Syn. N. A. Syrphidae, 282.

5623. Rhipidia extincta. (Tipulidæ.)

Locality: Radoboj, Croatia. Horizon: Mayencian.

1841. Unger. Verhandl. leop.-carol. akad. naturf., xix: 425. *Pl.* 71, *fig.* 1.
1841. " Foss. insect., 13. *Pl.* 71, *fig.* 1.
1849. Heer. Insektenf. tertiärg. Oeningen, ii: 196. *Pl.* 14, *fig.* 17.
1850. " Neue denkschr. allg. schweiz. gesellsch. wiss., xi: 196. *Pl.* 14, *fig.* 17.
1852. Giebel. Deutschl. petref., 640.
1856. " Insect. d. vorwelt, 243.
1885. Scudder. Zittel, Handb. palaeont., i, th. ii: 809. *Fig.* 1081.
1886. " Zittel-Barrois, Traité de paléont., ii: 811. *Fig.* 1098.

See also Limnobia extincta.

5624. Rhipidia maior. (Tipulidæ.)

Locality: Radoboj, Croatia. Horizon: Mayencian.

1841. Unger. Verhandl. leop.-carol. akad. naturf., xix: 425–426. *Pl.* 71, *fig.* 2.
1841. " Foss. insecten, 13. *Pl.* 71, *fig.* 2.

See also Tipula ungeri, etc.

5625. Rhipidia picta. (Tipulidæ.)

Locality: Radoboj, Croatia. Horizon: Mayencian.

1849. Heer. Insektenf. tertiärg. Oeningen, ii: 197. *Pl.* 14, *fig.* 18.
1850. " Neue denkschr. allg. schweiz. gesellsch. wiss., xi: 197. *Pl.* 14, *fig.* 18.
1852. Giebel. Deutschl. petref., 640.
1856. " Insect. d. vorwelt, 243.

See also Limnobia picta.

5626. Rhipidia propinqua. (Tipulidæ.)

Locality: Radoboj, Croatia. Horizon: Mayencian.

1849. Heer. Insektenf. tertiärg. Oeningen, ii: 198. *Pl.* 14, *fig.* 19.
1852. Giebel. Deutschl. petref., 640.
1856. " Insect. d. vorwelt, 243.

See also Limnobia propinqua.

5627. Rhyphus ——. (Rhyphidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1845. Berendt. Bernst. befindl. organ. reste vorw., i: 57.
1850. Loew. Bernsteinfauna, 39 (4 sp.).

5628. Rhyphus ——. (Rhyphidæ.)

Locality: Sicilian amber. Horizon: ——.
1838. Guérin. Rev. zool., 1838: 170 (Ryphus). *Pl.* 1, *fig.* 14.

5629. Rhyphus maculatus. (Rhyphidæ.)

Locality: Radoboj, Croatia. Horizon: Mayencian.
1849. Heer. Insektenf. tertiärg. Oeningen, ii: 208–209. *Pl.* 15, *figs.* 22, 23*a*, c.
1852. Giebel. Deutschl. petref., 641.
1856. " Insect. d. vorwelt, 226.
1885. Scudder. Zittel, Handb. palaeont., i, th. ii: 809. *Fig.* 1080.
1886. " Zittel-Barrois, Traité de paléont., ii: 810. *Fig.* 1097.

Rumphomyia ——. See Rhamphomyia ——.

5630. Rymosia strangulata. (Mycetophilidæ.)

Locality: Green River, Wyo. Horizon: Oligocene.
1890. Scudder. Tert. ins. N. A., 590. *Pl.* 10, *fig.* 2.

Ryphus ——. See Rhyphus ——.

5631. Sackenia ——. (Mycetophilidæ.)

Locality: Green River, Wyo. Horizon: Oligocene.
1878. Scudder. Bull. U. S. geol. surv. terr., iv: 750.
1890. " Tert. ins. N. A., 596–597.

5632. Sackenia? ——. (Mycetophilidæ.)

Locality: White River, Utah. Horizon: Oligocene.
1890. Scudder. Tert. ins. N. A., 596. *Pl.* 5, *fig.* 50.

5633. Sackenia arcuata. (Mycetophilidæ.)

Locality: White River, Colo. Horizon: Oligocene.
1877. Scudder. Bull. U. S. geol. surv. terr., iii: 754–755.
1885. " Zittel, Handb. palaeont., i, th. ii: 811. *Fig.* 1088.
1886. " Zittel-Barrois, Traité de paléont., ii: 813. *Fig.* 1105.
1890. " Tert. ins. N. A., 595–596. *Pl.* 5, *figs.* 3, 4, 12, 13.

5634. Sapromyza ——. (Sapromyzidæ.)

Locality: Prussian amber. Horizon: Ligurian.
1850. Loew. Bernsteinfauna, 43.

5635. Sargus (vic.) ——. (Stratiomyidæ.)

Locality: Aix, France. Horizon: Ligurian.
1829. Curtis. Edinb. new phil. journ., vii: 296. *Pl.* 6, *fig.* 12.
1829. " Murchison-Lyell, Tert. form. Aix, 12. *Pl.* 6, *fig.* 12.

5636. Sargus ——. (Stratiomyidæ.)

Locality: Aix, France. Horizon: Ligurian.
1829. Serres. Géogn. terrains tert., 232.

5637. Scatophaga ———. (Cordyluridæ.)

Locality: Prussian amber. Horizon: Ligurian.

1832. Burmeister. Handb. ent., i: 636.
1836. " Man. ent., 578.

Scatops ———. See Scatopse ——— Serres.

5638. Scatopse ———. (Bibionidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1845. Berendt. Bernst. befindl. organ. reste vorw., i: 57.
1850. Loew. Bernsteinfauna, 39 (3 sp.).

5639. Scatopse ———. (Bibionidæ.)

Locality: Aix, France. Horizon: Ligurian.

1829. Serres. Géogn. terrains tert., 231 (Scatops).

5640. Sciara ———. (Mycetophilidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1845. Berendt. Bernst. befindl. organ. reste vorw., i: 57.
1850. Loew. Bernsteinfauna, 33 (21 sp.).

5641. Sciara ———. (Mycetophilidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1832. Burmeister. Handb. ent., i: 637.
1836. " Man. ent., 578.

5642. Sciara ———. (Mycetophilidæ.)

Locality: Rott, Rhenish Prussia. Horizon: Aquitanian.

1870. L. Heyden. Foss. dipt. Rott, 7, No. 6.
1870. " Palaeontogr., xvii: 243, No. 6.

5643. Sciara ———. (Mycetophilidæ.)

Locality: Rott, Rhenish Prussia. Horizon: Aquitanian.

1870. L. Heyden. Foss. dipt. Rott, 7, No. 7.
1870. " Palaeontogr., xvii: 243, No. 7.

5644. Sciara ———. (Mycetophilidæ.)

Locality: Rott, Rhenish Prussia. Horizon: Aquitanian.

1870. L. Heyden. Foss. dipt. Rott, 7, No. 8.
1870. " Palaeontogr., xvii: 243, No. 8.

5645. Sciara ———. (Mycetophilidæ.)

Compared with S. florilega.

Locality: Aix, France. Horizon: Ligurian.

1829. Serres. Géogn. terrains tert., 231 (Sciaris).

5646. Sciara acuminata. (Mycetophilidæ.)

Locality: Radoboj, Croatia. Horizon: Mayencian.

1849. Heer. Insektenf. tertiärg. Oeningen, ii: 207–208. *Pl.* 15, *fig.* 20.
1852. Giebel. Deutschl. petref. 641.
1856. " Insect. d. vorwelt, 231.

See also Sciophila acuminata.

5647. Sciara atavina. (Mycetophilidæ.)

Locality: Rott, Rhenish Prussia. Horizon: Aquitanian.

1870. L. Heyden. Foss. dipt. Rott, 5. *Pl.* 1, *fig.* 4.
1870. " Palaeontogr., xvii: 241. *Pl.* 44, *fig.* 4.

5648. Sciara defossa. (Mycetophilidæ.)

Locality: Rott, Rhenish Prussia. Horizon: Aquitanian.

1870. L. Heyden. Foss. dipt. Rott, 5. *Pl.* 1, *fig.* 3.
1870. " Palaeontogr., xvii: 241. *Pl.* 44, *fig.* 3.

5649. Sciara deleta. (Mycetophilidæ.)

Locality: Oeningen, Baden. Horizon: Tortonian.

1865. Heer. Urwelt der Schweiz. *Fig.* 319 on *p.* 394.
1872. " Monde prim. Suisse. *Fig.* 319 on *p.* 484.
1876. " Prim. world Switz., ii. *Fig.* 319 on *p.* 54.
1879. " Urwelt der Schweiz, 2^{e} aufl. *Fig.* 361 on *p.* 420.

5650. Sciara deperdita. (Mycetophilidæ.)

Compared with S. ungulata, Europe.

Locality: Quesnel, British Columbia. Horizon: ——.

1878. Scudder. Add. ins. fauna Quesnel, 1–2.
1878. " Rep. progr. geol. surv. Can., 1876–'77: 457–458.
1878. " Rapp. opér. comm. géol. Can., 1876–'77: 514–515.
1890. " Tert. ins. N. A., 586–587. *Pl.* 3, *fig.* 17.

5651. Sciara hirtella. (Mycetophilidæ.)

Locality: Radoboj, Croatia. Horizon: Mayencian.

1849. Heer. Insektenf. tertiärg. Oeningen, ii: 207. *Pl.* 2, *fig.* 1*a*****; *pl.* 15, *fig.* 19.
1852. Giebel. Deutschl. petref., 641.
1856. " Insect. d. vorwelt, 231.

See also Sciophila hirtella.

5652. Sciara hirticornis. (Mycetophilidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1850. Loew. Bernsteinfauna, 34.
1856. " Insect. d. vorwelt, 231.

5653. Sciara janassa. (Mycetophilidæ.)

Locality: Rott, Rhenish Prussia. Horizon: Aquitanian.

1870. L. Heyden. Foss. dipt. Rott, 4. *Pl.* 1, *fig.* 2.
1870. " Palaeontogr., xvii: 240. *Pl.* 44, *fig.* 2.

5654. Sciara martii. (Mycetophilidæ.)

Locality: Krottensee, Bohemia. Horizon: Aquitanian.

1877. Novák. Sitzungsb. k. akad. wiss. Wien, lxxvi: 89–90. *Pl.* 3, *fig.* 6.
1877. " Fauna egerer tertiärb., 19–20. *Pl.* 3, *fig.* 6.

5655. Sciara minutula. (Mycetophilidæ.)

Localities: Radoboj, Croatia; Aix, France. Horizons: Mayencian, Ligurian.

1849. Heer. Insektenf. tertiärg. Oeningen, ii: 208. *Pl.* 15, *fig.* 21.
1852. Giebel. Deutschl. petref., 641.
1856. " Insect. d. vorwelt, 231.
1861. Saporta. Heer, Rech. climat pays tert., 153.
See also Sciophila minutula.

5656. Sciara rottensis. (Mycetophilidæ.)

Locality: Rott, Rhenish Prussia. Horizon: Aquitanian.

1870. L. Heyden. Foss. dipt. Rott, 6. *Pl.* 1, *fig.* 5.
1870. " Palaeontogr., xvii: 242. *Pl.* 44, *fig.* 5.

5657. Sciara scopuli. (Mycetophilidæ.)

Locality: Green River, Wyo. Horizon: Oligocene.

1890. Scudder. Tert. ins. N. A., 588. *Pl.* 10, *fig.* 16.

5658. Sciara troglodytes. (Mycetophilidæ.)

Locality: Aix, France. Horizon: Ligurian.

1861. Heer. Saporta, Heer, Rech. climat pays tert., 153 (undescr.).

5659. Sciara winnertzii. (Mycetophilidæ.)

Locality: Rott, Rhenish Prussia. Horizon: Aquitanian.

1870. L. Heyden. Foss. dipt. Rott, 6–7. *Pl.* 1, *fig.* 6.
1870. " Palaeontogr., xvii: 243–243. *Pl.* 44, *fig.* 6.

Sciaris ——. See Sciara —— Serres.

5660. Sciobia —— (19 sp.). (Mycetophilidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1850. Loew. Bernsteinfauna, 34.

5661. Sciobia peduncularis. (Mycetophilidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1850. Loew. Bernsteinfauna, 34.

5662. Sciobia quadrangularis. (Mycetophilidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1850. Loew. Bernsteinfauna, 34.

5663. Sciobia spinosa. (Mycetophilidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1850. Loew. Bernsteinfauna, 34.

5664. Sciomyza ——. (Sciomyzidæ.)

Locality: Green River, Wyo. Horizon: Oligocene.

1890. Scudder. Tert. ins. N. A., 546. *Pl.* 10, *fig.* 5.

5665. Sciomyza ? disjecta. (Sciomyzidæ.)

Locality: Green River, Wyo. Horizon: Oligocene.

1878. Scudder. Bull. U. S. geol. surv. terr., iv: 758.
1890. " Tert. ins. N. A., 546. *Pl.* 9, *figs.* 7, 22, 25, 30, 32, 33.

5666. Sciomyza ? manca. (Sciomyzidæ.)

Locality: Green River, Wyo. Horizon: Oligocene.

1878. Scudder. Bull. U. S. geol. surv. terr., iv: 756–758.
1890. " Tert. ins. N. A., 543–545. *Pl.* 4, *fig.* 9; *pl.* 9, *figs.* 1–6, 15, 16, 18, 20, 23, 24, 28, 29.

5667. Sciomyza revelata. (Sciomyzidæ.)

Locality: Quesnel, British Columbia. Horizon: ———.

1877. Scudder. Rep. progr. geol. surv. Can., 1875–'76: 275–276.
1877. " Ins. tert. Quesnel, 10–11.
1877. " Rapp. opér. comm. géol. Can., 1875–'76: 305–306.
1878. " Add. ins. fauna Quesnel, 2–3.
1878. " Rep. progr. geol. surv. Can., 1876–'77: 458–459.
1878. " Rapp. opér. comm. géol. Can., 1876–'77: 515–516.
1890. " Tert. ins. N. A., 542–543. *Pl.* 3, *figs.* 3–6.

5668. Sciophila ———. (Mycetophilidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1845. Berendt. Bernst. befindl. organ. reste vorw., i: 57.
1850. Loew. Bernsteinfauna, 34 (15 sp.).

5669. Sciophila acuminata. (Mycetophilidæ.)

Locality: Radoboj, Croatia. Horizon: Mayencian.

1852. Giebel. Deutschl. petref., 641.
See also Sciara acuminata.

5670. Sciophila atra. (Mycetophilidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1856. Giebel. Insect. d. vorwelt, 237.

5671. Sciophila dilatata. (Mycetophilidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1850. Loew. Bernsteinfauna, 34.
1856. Giebel. Insect. d. vorwelt, 237.

5672. Sciophila hirtella. (Mycetophilidæ.)

Locality: Radoboj, Croatia. Horizon: Mayencian.

1852. Giebel. Deutschl. petref., 641.
See also Sciara hirtella.

5673. Sciophila hyattii. (Mycetophilidæ.)

Locality: Green River, Wyo. Horizon: Oligocene.

1890. Scudder. Tert. ins. N. A., 597–598. *Pl.* 10, *fig.* 6.

5674. Sciophila loewi. (Mycetophilidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1856. Giebel. Insect. d. vorwelt, 236.

5675. Sciophila minutula. (Mycetophilidæ.)

Locality: Radoboj, Croatia. Horizon: Mayencian.

1852. Giebel. Deutschl. petref., 641.
See also Sciara minutula.

5676. Sciophila socialis. (Mycetophilidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1856.	Giebel.	Insect. d. vorwelt, 236–237.

5677. Sciophila tenera. (Mycetophilidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1850.	Loew.	Bernsteinfauna, 34 (undescr.).
1856.	Giebel.	Insect. d. vorwelt, 237 (undescr.).

5678. Sciophila vetusta. (Mycetophilidæ.)

Locality: Parschlug, Styria. Horizon: Tortonian.

1849.	Heer.	Insektenf. tertiärg. Oeningen, ii: 206–207. *Pl.* 15, *fig.* 27.
1852.	Giebel.	Deutschl. petref., 641.
1856.	"	Insect. d. vorwelt, 236.

5679. Sendelia mirabilis. (Chironomidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1868.	Duisburg.	Schrift. k. phys.-ökon. gesellsch. Königsb., ix: 23.

5680. Silvius ———. (Tabanidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1845.	Berendt.	Bernst. befindl. organ. reste vorw., i: 57.

5681. Silvius laticornis. (Tabanidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1850.	Loew.	Bernsteinfauna, 40 (undescr.).
1856.	Giebel.	Insect. d. vorwelt, 215 (undescr.).

Simulia ———. See Simulium ——— Berendt, Foerster, Heyden.

Simulia pasithea. See Simulium pasithea.

5682. Simulium ———. (Simulidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1845.	Berendt.	Bernstein. befindl. organ. reste vorw., i: 57 (Simulia).
1850.	Loew.	Bernsteinfauna, 38 (6 sp.) (Simulia).

5683. Simulium ———. (Simulidæ.)

Locality: Brunstatt, Alsatia. Horizon: Middle Oligocene.

1890.	Foerster.	In litt. (Simulia).

5684. Simulium ———. (Simulidæ.)

Locality: Sicilian amber. Horizon: ———.

1838.	Guérin.	Rev. zool., 1838: 170. *Pl.* 1, *fig.* 13.

5685. Simulium ———. (Simulidæ.)

Locality: Rott, Rhenish Prussia. Horizon: Aquitanian.

1870.	L. Heyden.	Foss. dipt. Rott, 3 (Simulia).
1870.	"	Palaeontogr., xvii: 239 (Simulia).

5686. Simulium pasithea. (Simulidæ.)

Locality: Rott, Rhenish Prussia. Horizon: Aquitanian.

1870. L. Heyden. Foss. dipt. Rott, 2–3 (Simulia). *Pl.* 1, *fig.* 1.
1870. " Palaeontogr., xvii: 238–239 (Simulia). *Pl.* 44, *fig.* 1.

5687. Sphegina ———. (Syrphidæ.)

Locality: Florissant, Colo. Horizon: Oligocene.

1886. Williston. Syn. N. A. Syrphidæ, 281.

5688. Spiladomyia simplex. (Tipulidæ.)

Locality: White River, Colo. Horizon: Oligocene.

1877. Scudder. Bull. U. S. geol. surv. terr., iii: 750.
1890. " Tert. ins. N. A., 573. *Pl.* 5, *figs.* 37, 38.

5689. Stenocinclis? ———. (Asilidæ.)

Locality: Green River, Wyo. Horizon: Oligocene.

1890. Scudder. Tert. ins. N. A., 565. *Pl.* 10, *fig.* 15.

5690. Stenocinclis anomala. (Asilidæ.)

Locality: Green River, Wyo. Horizon: Oligocene.

1878. Scudder. Bull. U. S. geol. surv. terr., iv: 751–752.
1890. " Tert. ins. N. A., 564–565. *Pl.* 9, *fig.* 10.

Stomoxya ———. See Stomoxys ———.

5691. Stomoxys ———. (Muscidæ.)

Locality: ———. Horizon: ———.

1846. Giebel. Paläozool., 278 (Stomoxya).

5692. Stratiomys ——— (larva). (Stratiomyidæ.)

Locality: Bernouville, Eure, France. Horizon: Quaternary.

1880. Brongniart. Note tufs Bernouv., 2.
1880. " Bull. soc. géol. France, 1880: 419.

5693. Stratiomys ———. (Stratiomyidæ.)

Locality: ———. Horizon: ———.

1846. Giebel. Paläozool., 277.

5694. Stratiomys? ——— (larva). (Stratiomyidæ.)

Locality: Rott, Rhenish Prussia. Horizon: Aquitanian.

1870. L. Heyden. Foss. dipt. Rott, 28. *Pl.* 2, *fig.* 31.
1870. " Palaeontogr., xvii: 254. *Pl.* 45, *fig.* 31.

5695. Stratiomys heberti. (Stratiomyidæ.)

Locality: Pontary, Auvergne, France. Horizon: Aquitanian.

1870. Oustalet. Ann. sc. géol., ii, art. 3: 156–157. *Pl.* 6, *figs.* 11–14.

Styringia ———. See Styringomyia ———.

5696. Styringomyia ———. (Tipulidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1845. Berendt. Bernst. befindl. organ. reste vorw., i: 57 (Styringia).

5697. **Styringomyia gracilis.** (Tipulidæ.)

Compared with S. venusta, Copal.

Locality: Prussian amber. Horizon: Ligurian.

1850.	Loew.	Bernsteinfauna, 38 (undescr.).
1856.	Giebel.	Insect. d. vorwelt, 247.
1861.	Loew.	Dipt. fauna bernsteins, 6, 8.
1861.	"	Ber. versamml. deutsch. naturf., xxxv: 91, 93.
1869.	"	Dipt. amber, 7, 11.

5698. **Syrphus** —— (2 sp.). (Syrphidæ.)

Locality: Brunstatt, Alsatia. Horizon: Middle Oligocene.

1890.	Foerster.	In litt.

5699. **Syrphus** ——. (Syrphidæ.)

Locality: Rott, Rhenish Prussia. Horizon: Aquitanian.

1870.	L. Heyden.	Foss. dipt. Rott, 27 (No. 2). *Fig.*
1870.	"	Palaeontogr., xvii: 263 (No. 2). *Fig.*

5700. **Syrphus** ——. (Syrphidæ.)

Locality; Green River, Wyo. Horizon: Oligocene.

1878.	Scudder.	Bull. U. S. geol. surv. terr., iv: 755.
1890.	"	Tert. ins. N. A., 559.

5701. **Syrphus** ——. (Syrphidæ.)

Locality: Florissant, Colo. Horizon: Oligocene.

1886.	Williston.	Syn. N. A. Syrphidæ, 282.

5702. **Syrphus bremii.** (Syrphidæ.)

Locality: Oeningen, Baden. Horizon: Tortonian.

1865.	Heer.	Urwelt der Schweiz. *Fig.* 314 on *p.* 394.
1872.	"	Monde primo Suisse. *Fig.* 314 on *p.* 484.
1876.	"	Prim. world Switz., ii. *Fig.* 314 on *p.* 54.
1879.	"	Urwelt der Schweiz, 2^{e} aufl. *Fig.* 356 on *p.* 420.

5703. **Syrphus euphemus.** (Syrphidæ.)

Locality: Rott, Rhenish Prussia. Horizon: Aquitanian.

1870.	L. Heyden.	Foss. dipt. Rott, 26. *Pl.* 2, *fig.* 29.
1870.	"	Palaeontogr., xvii: 262. *Pl.* 45, *fig.* 29.

5704. **Syrphus freyeri.** (Syrphidæ.)

Localities: Radoboj, Croatia; Senigaglia, Italy. Horizon: Mayencian.

1849.	Heer.	Insektenf. tertiärg. Oeningen, ii: 244–245. *Pl.* 17, *fig.* 12.
1852.	Giebel.	Deutschl. petref., 642.
1856.	"	Insect. d. vorwelt, 200.
1859.	Scarabelli.	Mass.-Scarab., Stud. flora foss. Senig., 25.

5705. **Syrphus geminatus.** (Syrphidæ.)

Locality: Radoboj, Croatia. Horizon: Mayencian.

1849.	Heer.	Insektenf. tertiärg. Oeningen, ii: 245–246. *Pl.* 17, *fig.* 13.
1852.	Giebel.	Deutschl. petref., 642.
1856.	"	Insect. d. vorwelt 201.

5706. Syrphus haidingeri. (Syrphidæ.)

Locality: Radoboj, Croatia. Horizon: Mayencian.

1849.	Heer.	Insektenf. tertiärg. Oeningen, ii: 243–244. *Pl.* 17, *fig.* 11.
1852.	Giebel.	Deutschl. petref., 642.
1856.	"	Insect. d. vorwelt, 200.

5707. Syrphus infumatus. (Syrphidæ.)

Locality: Radoboj, Croatia. Horizon: Mayencian.

1849.	Heer.	Insektenf. tertiärg. Oeningen, ii: 246. *Pl.* 17, *fig.* 14.
1852.	Giebel.	Deutschl. petref., 642.
1856.	"	Insect. d. vorwelt, 201.
1885.	Scudder.	Zittel, Handb. palaeont., i, th. ii: 807. *Fig.* 1073.
1886.	"	Zittel-Barrois, Traité de paléont., ii: 807. *Fig.* 1090.

5708. Syrphus schellenbergi. (Syrphidæ.)

Locality: Oeningen, Baden. Horizon: Tortonian.

1865.	Heer.	Urwelt der Schweiz. *Fig.* 315 on *p.* 394.
1872.	"	Monde prim. Suisse. *Fig.* 315 on *p.* 484.
1876.	"	Prim. world Switz., ii. *Fig.* 315 on *p.* 54.
1879.	"	Urwelt der Schweiz, 2ᵉ aufl. *Fig.* 357 on *p.* 420.

5709. Tabanus ———. (Tabanidæ.)

Locality: Rhine, Germany. Horizon: Aquitanian?

1831.	Goldfuss.	Verhandl. leop.-carol. akad. naturf., vii, i: 118.

5710. Tabanus ———. (Tabanidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1834.	Keferstein.	Naturg. erdkörp., ii: 337 (as of Berendt, but erroneously).

5711. Tabanus ———. (Tabanidæ.)

Locality: Aix, France. Horizon: Ligurian.

1829.	Serres.	Géogn. terrains tert., 232.

5712. Tachina ———. (Tachinidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1831.	Burmeister.	Oken, Isis, 1831: 1100 (Tachinus).

5713. Tachina ———. (Tachinidæ.)

Locality: Oeningen, Baden. Horizon: Tortonian.

1888.	Schöberlin.	Soc. entom., iii: 68.

5714. Tachina ———. (Tachinidæ.)

Locality: Green River, Wyo. Horizon: Oligocene.

1878.	Scudder.	Bull. U. S. geol. surv. terr., iv: 756.
1890.	"	Tert. ins. N. A., 554–555.

5715. Tachina ———. (Tachinidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1868.	Smith.	Quart. journ. sc., v: 184 (Tachinus). *Pl.*, *fig.* 5.

5716. Tachina succini. (Tachinidæ.)

Compared with T. fastuosa, etc.

Locality: Prussian amber. Horizon: Ligurian.

1862. Giebel. Zeitschr. ges. naturw., xx: 319.

Tachinus ——. See Tachina —— Burmeister, Smith.

5717. Tachydromia ——. (Empidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1845. Berendt. Bernst. befindl. organ. reste vorw., i: 57.

5718. Tachydromia ——. (Empidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1832. Burmeister. Handb. ent., i: 636.
1836. " Man. ent., 578.

5719. Tachydromia —— (7 sp.). (Empidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1850. Loew. Bernsteinfauna, 42.

5720. Tachypeza —— (5 sp.). (Empidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1850. Loew. Bernsteinfauna, 41–42.

5721. Tanymera —— (4 sp.). (Tipulidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1850. Loew. Bernsteinfauna, 36, 38.

5722. Tanypus ——. (Chironomidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1845. Berendt. Bernst. befindl. organ. reste vorw., i: 57.
1850. Loew. Bernsteinfauna, 29 (7 sp.).

5723. Tanypus ——. (Chironomidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1832. Burmeister. Handb. ent., i: 637.
1836. " Man. ent., 578.

5724. Tanysphyra ——. (Tipulidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1845. Berendt. Bernst. befindl. organ. reste vorw., i: 57.

5725. Tanysphyra gracilis. (Tipulidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1850. Loew. Bernsteinfauna, 38.
1856. Giebel. Insect. d. vorwelt, 247.

5726. **Tephritis antiqua.** (Trypetidæ.)

Locality: Radoboj, Croatia. Horizon: Mayencian.

1849. Heer. Insektenf. tertiärg. Oeningen, ii: 252–253. *Pl.* 17, *fig.* 15.
1852. Giebel. Deutschl. petref., 643.

See also Trypeta antiqua.

5727. **Tetanocera** —— (2 sp.). (Sciomyzidæ.)

Locality: Brunstatt, Alsatia. Horizon: Middle Oligocene.

1890. Foerster. In litt.

Thereua pinguis. See Thereva pinguis.

5728. **Thereva** ——. (Therevidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1845. Berendt. Bernst. befindl. organ. reste vorw., i: 57.
1850. Loew. Bernsteinfauna, 40 (3 sp.).

5729. **Thereva carbonum.** (Therevidæ.)

Locality: Wilhelmsfund, Nassau. Horizon: "Braunkohl."

1856. Heyden. Palaeontogr., iv: 200–201. *Pl.* 37, *fig.* 6.

5730. **Thereva pinguis.** (Therevidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1850. Loew. Bernsteinfauna, 40 (Thereua).
1856. Giebel. Insect. d. vorwelt, 214.

5731. **Thirza naumanni.** (Empidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1856. Giebel. Insect. d. vorwelt, 210.

5732. **Tipula** ——. (Tipulidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1845. Berendt. Bernst. befindl. organ. reste vorw., i: 57.
1850. Loew. Bernsteinfauna, 36–37 (16 sp.).

5733. **Tipula** ——. (Tipulidæ.)

Compared with T. pratensis.

Locality: Prussian amber. Horizon: Ligurian.

1831. Burmeister. Oken, Isis, 1831: 1100.
1832. " Handb. ent., i: 637.
1836. " Man. ent., 578.

5734. **Tipula** ——. (Tipulidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1822. Defrance. Dict. sc. nat., xxiii: 524 (Tipules).

5735. **Tipula** —— (2 sp.). (Tipulidæ.)

Locality: Brunstatt, Alsatia. Horizon: Middle Oligocene.

1890. Foerster. In litt.

5736. Tipula ——. (Tipulidæ.)

Locality: Sicilian amber. Horizon: ——.

838. Guérin. Rev. zool., 1838: 170. *Pl.* 1, *fig.* 18.

5737. Tipula? ——(larva). (Tipulidæ.)

Locality: Sieblos, Rhenish Prussia. Horizon: Aquitanian.

862. Heyden. Palaeontogr., v: 119–120. *Pl.* 23, *fig.* 19.

5738. Tipula? ——. (Tipulidæ.)

Compared with T. rivosa.

Locality: Aix, France. Horizon: Ligurian.

1847. Hope. Trans. ent. soc. Lond., iv: 253.

5739. Tipula ——. (Tipulidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1820. Schlotheim. Petrefactenk., 43.

5740. Tipula ——. (Tipulidæ.)

Compared with T. ochracea.

Locality: Oeningen, Baden. Horizon: Tortonian.

1888. Schöberlin. Soc. entom., iii: 69.

5741. Tipula ——. (Tipulidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1742. Sendel. Hist. succ., 32, 66–68, 70, 76, 78, 260. *Pl.* 1, *fig.* 8; *pl.* 2, *figs.* 1–3, 5–7, 11, 12, 14, 16; *pl.* 6, *fig.* 34; *pl.* 7, *figs.* 2–3.
1825. Guérin. Dict. class. hist. nat., viii: 580. (Tipule).
1829. Serres. Géogn. terrains tert., 242.

5742. Tipula æmula. (Tipulidæ.)

Locality: Radoboj, Croatia. Horizon: Mayencian.

1849. Heer. Insektenf. tertiärg. Oeningen, ii: 193. *Pl.* 15, *fig.* 2.
1850. " Neue denkschr. allg. schweiz. gesellsch., xi: 193. *Pl.* 15, *fig.* 2.
1852. Giebel. Deutschl. petref., 640.
1856. " Insect. d. vorwelt, 240.

5743. Tipula angustata. (Tipulidæ.)

Locality: Krottensee, Bohemia. Horizon: Aquitanian.

1877. Novák. Sitzungsb. k. akad. wiss. Wien, lxxvi: 87–88. *Pl.* 1, *fig.* 1.
1877. " Fauna egerer tertiärb., 17–18. *Pl.* 1, *fig.* 1.

5744. Tipula antiqua. (Tipulidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1822. Presl. Del. prag., i: 202–203.

5745. Tipula brevirostris. (Tipulidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1850. Loew. Bernsteinfauna, 37 (undescr.).
1856. Giebel. Insect. d. vorwelt, 241 (undescr.).

5746. Tipula curvicornis. (Tipulidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1822. Presl. Del. prag., i: 200-201.

5747. Tipula decrepita. (Tipulidæ.)

Localities: White River, Colorado and Utah. Horizon: Oligocene.

1877. Scudder. Bull. U. S. geol. surv. terr., iii: 752.
1890. " Tert. ins. N. A., 576–577. *Pl.* 5, *figs.* 56, 57.

5748. Tipula eucera. (Tipulidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1850. Loew. Bernsteinfauna, 37 (undescr.).
1856. Giebel. Insect. d. vorwelt, 241 (undescr.).

5749. Tipula expectans. (Tipulidæ.)

Locality: Krottensee, Bohemia. Horizon: Aquitanian.

1877. Novák. Sitzungs. k. akad. wiss. Wien, lxxvi: 88. *Pl.* 1, *fig.* 2.
1877. " Fauna egerer tertiärb., 18. *Pl.* 1, *fig.* 2.

5750. Tipula fusca. (Tipulidæ.)

Locality: Copal. Horizon: Recent.

1776. Bloch. Beschäft. berl. gesellsch. naturf. freunde, ii: 175–176. *Pl.* 4, *fig.* 15.

5751. Tipula goliath. (Tipulidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1850. Loew. Bernsteinfauna, 37 (undescr.).
1856. Geibel. Insect. d. vorwelt, 241 (undescr.).

5752. Tipula infernalis. (Tipulidæ.)

Locality: Aix, France. Horizon: Ligurian.

1861. Heer. Saporta, Heer, Rech. climat pays tert., 153 (undescr.).

5753. Tipula lineata. (Tipulidæ.)

Localities: Radoboj, Croatia; Gabbro, Italy. Horizon: Mayencian.

1849. Heer. Insektenkf. tertiärg. Oeningen, ii: 194–195. *Pl.* 15, *fig.* 4.
1850. " Neue denkschr. schweiz. gesellsch. wiss., xi: 194–195. *Pl.* 15, *fig.* 4.
1852. Giebel. Deutschl. petref., 640.
1856. " Insect. d. vorwelt, 241.
1878. Capellini. Atti accad. linc., (3), mem. sc. fis., ii: 285.

5754. Tipula maculipennis. (Tipulidæ.)

Locality: Radoboj, Croatia. Horizon: Mayencian.

1849. Heer. Insektenf. tertiärg. Oeningen, ii: 191–193. *Pl.* 15, *fig.* 1.
1850. " Neue denkschr. schweiz. gesellsch. wiss., xi: 191–193. *Pl.* 15, *fig.* 1.
1852. Giebel. Deutschl. petref., 640.
1856. " Insect. d. vorwelt, 240.

5755. Tipula major. (Tipulidæ.)

Locality: Radoboj, Croatia. Horizon: Mayencian.

1856. Giebel. Insect. d. vorwelt, 241.
See also Tipula ungeri, etc.

5756. Tipula obtecta. (Tipulidæ.)

Locality: Radoboj, Croatia. Horizon: Mayencian.

1849. Heer. Insektenf. tertiärg. Oeningen, ii: 195. *Pl.* 15, *fig.* 5.
1850. " Neue denkschr. schweiz. gesellsch. wiss., xi: 195. *Pl.* 15, *fig.* 5.
1852. Giebel. Deutschl. petref., 640.
1856. " Insect. d. vorwelt, 241.

5757. Tipula protogæa. (Tipulidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1822. Presl. Del. prag., i: 201–202.

5758. Tipula sepulchri. (Tipulidæ.)

Locality: Green River, Wyo. Horizon: Oligocene.

1890. Scudder. Tert. ins. N. A., 578. *Pl.* 10, *fig.* 1.

5759. Tipula spoliata. (Tipulidæ.)

Locality: Green River, Wyo. Horizon: Oligocene.

1890. Scudder. Tert. ins. N. A., 577–578. *Pl.* 10, *fig.* 4.

5760. Tipula tecta. (Tipulidæ.)

Locality: White River, Utah. Horizon: Oligocene.

1877. Scudder. Bull. U. S. geol. surv. terr., iii: 752–753.
1890. " Tert. ins. N. A., 577. *Pl.* 5, *figs.* 46, 47.

5761. Tipula ungeri. (Tipulidæ.)

Locality: Radoboj, Croatia. Horizon: Mayencian.

1849. Heer. Insektenf. tertiärg. Oeningen, ii: 195–196. *Pl.* 15, *fig.* 6.
1852. Giebel. Deutschl. petref., 640.
See also Rhipidia major, Tipula major.

5762. Tipula varia. (Tipulidæ.)

Locality: Radoboj, Croatia. Horizon: Mayencian.

1849. Heer. Insektenf. tertiärg. Oeningen, ii: 193–194. *Pl.* 15, *fig.* 3.
1850. " Neue denkschr. schweiz. gesellsch. wiss., xi: 193–194. *Pl.* 15, *fig.* 3.
1852. Giebel. Deutschl. petref., 640.
1867. " Insect. d. vorwelt, 240–241.

5763. Tipula zignoi. (Tipulidæ.)

Locality: Chiavon, Italy. Horizon: ——.

1886. Omboni. Alc. ins. foss. Ven., 8. *Pl.* 3, *fig.* 12.
1886. " Atti r. ist. ven., (6), iv: 1428. *Pl.* 3, *fig.* 12.

5764. Toxorhina ——. (Tipulidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1845. Berendt. Bernst. befindl. organ. reste vorw., i: 57.

5765. Toxorhina brevipalpa. (Tipulidæ.)

Locality: Prussian amber. **Horizon:** Ligurian.

1850. Loew. Bernsteinfauna, 37 (undescr.).
1851. " Linn. entom., v: 400–401. *Pl.* 2, *fig.* 21.
1856. Giebel. Insect. d. vorwelt, 242.
1859. Osten Sacken. Proc. acad. nat. sc. Philad., 1859: 221.
1860. " Proc. acad. nat. sc. Philad., 1860: 17. (No spec. mentioned, = Limnobiorhynchus.)
1869. " Monogr. dipt. N. A., iv: 107–109. (No spec. mentioned, = Elephantomyia.)

5766. Toxorhina longirostris. (Tipulidæ.)

Locality: Prussian amber. **Horizon:** Ligurian.

1850. Loew. Bernsteinfauna, 37 (undescr.).
1851. " Linn. entom., v: 400. *Pl.* 2, *figs.* 20, 23.
1856. Giebel. Insect. d. vorwelt, 242.
1859. Osten Sacken. Proc. acad. nat. sc. Philad., 1859: 221.
1860. " Proc. acad. nat. sc. Philad., 1860: 17. (No spec. mentioned. = Limnobiorhynchus.)
1869. " Monogr. dipt. N. A., iv: 107–109. (No spec. mentioned, = Elephantomyia.)

5767. Toxorhina pulchella. (Tipulidæ.)

Locality: Prussian amber. **Horizon:** Ligurian.

1850. Loew. Bernsteinfauna, 37 (undescr.).
1851. " Linn. entom., v: 400. *Pl.* 2, *fig.* 19.
1856. Giebel. Insect. d. vorwelt, 242.
1859. Osten Sacken. Proc. acad. nat. sc. Philad., 1859: 221.
1860. " Proc. acad. nat. sc. Philad., 1860: 17. (No spec. mentioned, = Limnobiorhynchus.)
1869. " Monogr. dipt. N. A., iv: 107–109. (No spec. mentioned, = Elephantomyia.)

5768. Trichocera ——— (2 sp.). (Tipulidæ.)

Locality: Prussian amber. **Horizon:** Ligurian.

1850. Loew. Bernsteinfauna, 37.

5769. Trichocera ———. (Tipulidæ.)

Locality: Aix, France. **Horizon:** Ligurian.

1829. Serres. Géogn. terrains tert., 231.

5770. Trichoneura ———. (Tipulidæ.)

Locality: Prussian amber. **Horizon:** Ligurian.

1845. Berendt. Bernst. befindl. organ. reste vorw., i: 57.
1850. Loew. Bernsteinfauna, 37–38 (3 sp.).

5771. Trichoneura vulgaris. (Tipulidæ.)

Locality: Prussian amber. **Horizon:** Ligurian.

1850. Loew. Bernsteinfauna, 37–38.
1856. Giebel. Insect. d. vorwelt, 246.

5772. **Trichonta dawsoni.** (Mycetophilidæ.)

Locality : Quesnel, British Columbia. Horizon : ——.

1877. Scudder. Rep. progr. geol. surv. Can., 1875–'76 : 272.
1877. " Ins. tert. Quesnel, 7.
1877. " Rapp. opér. comm. géol. Can., 1875–'76: 301.
1890. " Tert. ins. N. A., 590. *Pl.* 3, *figs.* 12, 13.

5773. **Trypeta antiqua.** (Trypetidæ.)

Locality : Radoboj, Croatia. Horizon : Mayencian.

1852. Giebel. Deutschl. petref., 643 (Tyrpeta).
1856. " Insect. d. vorwelt, 195.
See also Tephritis antiqua.

Tyrpeta antiqua. See Trypeta antiqua.

5774. **Xylophagus** ——. (Xylophagidæ.)

Compared with X. ater.

Locality : Aix, France. Horizon : Ligurian.

1829. Serres. Géogn. terrains tert., 232.

5775. **Xylophagus mengeanus.** (Xylophagidæ.)

Locality : Prussian amber. Horizon : Ligurian.

1850. Loew. Bernsteinfauna, 39 (undescr.).
1856. Giebel. Insect. d. vorwelt, 204 (undescr.).

5776. **Xylophagus pallidus.** (Xylophagidæ.)

Locality : Aix, France. Horizon : Ligurian.

1856. Heer. Viert. naturf. gesellsch. Zürich, i : 36–37. *Pl.* 2, *fig.* 11.
1885. Scudder. Zittel, Handb. palaeont., i, th. ii : 809. *Fig.* 1079.
1886. " Zittel-Barrois, Traité de paléont., ii : 810. *Fig.* 1096.

5777. **Zygoneura** ——. (Mycetophilidæ.)

Locality : Prussian amber. Horizon : Ligurian.

1850. Loew. Bernsteinfauna, 32.

LEPIDOPTERA.

5778. —— —— (larva).

Locality : Florissant, Colo. Horizon : Oligocene.

1886. Minot. Arch. mikr. anat., xxviii : 46–47.

5779. —— ——.

Locality : Sinigaglia, Italy. Horizon : (Helvetian ?).

1842. Procaccini. Nuov. ann. sc. nat., vii : 449.

5780. —— —— (larva). (Lycænidæ.)

Compared with Papilio w-album.

Locality : Prussian amber. Horizon : Ligurian.

1835. Gravenhorst. Uebers. schles. gesellsch. vaterl. cult., 1834 : 93.

5781. —— —— (larva case). (Psychidæ.)
Locality: Prussian amber. Horizon: Ligurian.
1856. Menge. Progr. petrischule Danzig, 1856: 27–28, No. 1.

5782. —— —— (larva case). (Psychidæ.)
Locality: Prussian amber. Horizon: Ligurian.
1856. Menge. Progr. petrischule Danzig, 1856: 28, No. 2.

5783. —— —— (larva case). (Psychidæ.)
Locality: Prussian amber. Horizon: Ligurian.
1856. Menge. Progr. petrischule Danzig, 1856: 28, No. 3.

5784. —— —— (larva case). (Psychidæ.)
Locality: Prussian amber. Horizon: Ligurian.
1856. Menge. Progr. petrischule Danzig, 1856: 28, No. 4.

5785. —— —— (larva case). (Psychidæ.)
Locality: Prussian amber. Horizon: Ligurian.
1856. Menge. Progr. petrischule Danzig, 1856: 28, No. 5.

5786. —— —— (larva case). (Psychidæ.)
Locality: Prussian amber. Horizon: Ligurian.
1856. Menge. Progr. petrischule Danzig, 1856: 28, No. 6.

5787. —— —— (larva case). (Psychidæ.)
Locality: Prussian amber. Horizon: Ligurian.
1856. Menge. Progr. petrischule Danzig, 1856: 28, No. 7.

5788. —— —— (several). (Pyralidæ or Tortricidæ.)
Locality: Florissant, Colo. Horizon: Oligocene.
1881. Scudder. Bull. U. S. geol. surv. terr., vi: 290.
1883. " Ann. rep. U. S. geol. surv. terr., xii: 280.

5789. —— —— (several). (Rhopalocera).
Locality: Florissant, Colo. Horizon: Oligocene.
1881. Scudder. Bull. U. S. geol. surv. terr., vi: 290.
1883. " Ann. rep. U. S. geol. surv. terr., xii: 280.

5790. —— ——. (Tineidæ.)
Locality: Prussian amber. Horizon: Ligurian.
1856. Menge. Progr. petrischule Danzig, 1856: 28–29.

5791. —— ——. (Tortricidæ.)
Locality: Prussian amber. Horizon: Ligurian.
1856. Menge. Progr. petrischule Danzig, 1856: 29.

5792. —— —— (2 sp., pupæ). (Tortricidæ.)
Locality: Prussian amber. Horizon: Ligurian.
1856. Menge. Progr. petrischule Danzig, 1856: 29.

5793. ——— ——— (4 sp., larvæ). (Tortricidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1856. Menge. Progr. petrischule Danzig, 1856: 28–29.

——— ——— (Tortricidæ). See ——— ——— (Pyralidæ or Tortricidæ).

Angerona electrica. See Angerona electrina.

5794. Angerona electrina. (Phalænidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1862. Giebel. Zeitschr. ges. naturw., xx: 317.
1885. Oppenheim. Berl. entom. zeitschr., xxix: 347 (electrica).

5795. Antirrhæa? sepulta. (Nymphalidæ.)

Locality: Aix, France. Horizon: Ligurian.

1871. Kirby. Synon. catal. diurn. lepid., 39.
1877. " Synon. catal. diurn. lepid., suppl., 698.
See also Cyllo sepulta, etc.

5796. Apanthesis ———. (Nymphalidæ.)

Locality: Florissant, Colo. Horizon: Oligocene.

1889. Scudder. Butt. N. E., i: 758–759 (name only).
See also Apanthesis leuce.

5797. Apanthesis leuce. (Nymphalidæ.)

Locality: Florissant, Colo. Horizon: Oligocene.

1889. Scudder. Ann. rep. U. S. geol. surv., viii: 461. *Pl.* 52, *figs.* 12–13.
See also Apanthesis ———.

5798. Araschnia vetula. (Hesperidæ.)

Locality: Rott, Rhenish Prussia. Horizon: Aquitanian.

1871. Kirby. Synon. catal. diurn. lepid., 179.
See also Vanessa vetula, Thanatites vetulus.

5799. Argynnis pluto. (Papilionidæ.)

Locality: Radoboj, Croatia. Horizon: Mayencian.

1868. Edwards. Butt. N. A., i, Argynnis, i. *Fig.*
1871. Kirby. Synon. catal. diurn. lepid., 155.
See also Vanessa pluto, etc.

5800. Barbarothea ———. (Nymphalidæ.)

Locality: Florissant, Colo. Horizon: Oligocene.

1890. Scudder. Tert. ins. N. A., 29.

5801. Bombycites büchii. (Bombycidæ.)

Locality: Oeningen, Baden. Horizon: Tortonian.

1865. Heer. Urwelt der Schweiz, 397. *Fig.* 310 on *p.* 394.
1872. " Monde prim. Suisse, 486. *Fig.* 310 on *p.* 484.
1876. " Prim. world Switz., ii: 56. *Fig.* 310 on *p.* 54.
1879. " Urwelt der Schweiz, 2^e aufl., 422. *Fig.* 352 on *p.* 420.

5802. Bombycites œningensis. (Bombycidæ.)

Locality: Oeningen, Baden. Horizon: Tortonian.

1849. Heer. Insektenf. tertiärg. Oeningen, ii: 183–188. *Pl.* 14, *fig.* 7.
1852. Giebel. Deutschl. petref., 644.
1856. " Insect. d. vorwelt, 189.
1865. Heer. Urwelt der Schweiz, 397.
1872. " Monde prim. Suisse, 486.
1876. " Prim. world Switz., ii: 56.
1879. " Urwelt der Schweiz, 2^e aufl., 422.
1885. Oppenheim. Berl. entom. zeitschr., xxix: 349.

5803. Bombyx ——. (Bombycidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1742. Sendel. Hist. succin., 104, 116 (unnamed). *Pl.* 3, *figs.* 16, 17, 28.
1834. Keferstein. Naturg. erdkörp., ii: 333.

5804. Bombyx (or Cossus) ——. (Bombycidæ.)

Locality: Aix, France. Horizon: Ligurian.

1829. Serres. Géogn. terrains tert., 230.

5805. Coliates proserpina. (Papilionidæ.)

Locality: Aix, France. Horizon: Ligurian.

1875. Scudder. Mem. Amer. assoc. adv. sc., i: 52–53. *Pl.* 2, *fig.* 5.
1877. Kirby. Synon. catal. diurn. lepid., suppl., 801.
1885. Oppenheim. Berl. entom. zeitschr., xxix: 346.

Cossus ——. See Bombyx (or Cossus) ——.

5806. Cyllo? ——. (Nymphalidæ.)

Locality: Aix, France. Horizon: Ligurian.

1839. Boisduval. Ann. soc. ent. France, viii, bull. entom., 11-12.
See also Cyllo sepulta, etc.

5807. Cyllo sepulta. (Nymphalidæ.)

Locality: Aix, France. Horizon: Ligurian.

1840. Boisduval. Ann. soc. ent. France, ix: 371–374. *Pl.* 8.
1843. Serres. Actes linn. soc. Bord., xiii: 172. *Pl.* 2 (ined.?).
1851. Lefebvre. Ann. soc. ent. France, (2), ix: 71–88. *Pl.* 3^{ii}.
1851. Boisduval. Ann. soc. ent. France, (2), ix, bull. ent., 96-98.
1851. Westwood. Doubleday-Westwood, Gen. diurn. Lepid., ii: 361.
1854. Pictet. Traité de paléont., ii: 393. *Pl.* 40, *fig.* 11.
1868. Butler. Catal. satyr. Brit. mus., 189–190.
1874. Oustalet. La nature, iii: 36. *Fig.*
See also Cyllo ——, Nymphalis ——, Antirrhæa sepulta, Neorinopis sepulta, Papilio (Satyrus) ——.

5808. Eugonia atava. (Nymphalidæ.)

Locality: Radoboj, Croatia. Horizon: Mayencian.

1875. Scudder. Mem. Amer. assoc. adv. sc., i: 41–44. *Pl.* 1, *figs.* 1, 3, 7.
1885. Oppenheim. Berl. entom. zeitschr., xxix: 348.
See also Sphinx atava, etc.

5809. Junonia pluto. (Papilionidæ.)

Locality: Radoboj, Croatia. Horizon: Mayencian.

1873. Butler. Lepid. exot., 127–128. *Pl.* 48, *fig.* 7.
1873. " Geol. mag., x: 3–4. *Pl.* 1, *fig.* 7.
See also Vanessa pluto, etc.

5810. Jupiteria ———. (Nymphalidæ.)

Locality: Florissant, Colo. Horizon: Oligocene.

1883. Scudder. Ann. rep. U. S. geol. surv. terr., xii: 280 (name only).
1885. " Zittel, Handb. palaeont., i, th. ii: 814 (name only).
1886. " Zittel-Barrois, Traité de paléont., ii: 815 (name only).
1886. " Bull. U. S. geol. surv., No. 31: 95 (name only).
See also Jupiteria charon.

5811. Jupiteria charon. (Nymphalidæ.)

Locality: Florissant, Colo. Horizon: Oligocene.

1889. Scudder. Ann. rep. U. S. geol surv., viii: 450–452. *Pl.* 52, *figs.* 14–15.
See also Jupiteria ———.

Lethites renuesii. See Lethites reynesii.

5812. Lethites reynesii. (Nymphalidæ.)

Locality: Aix, France. Horizon: Ligurian.

1875. Scudder. Mem. Amer. assoc. adv. sc., i: 37–40. *Pl.* 1, *figs.* 2, 5.
1877. Kirby. Synon. catal. diurn. lepid., suppl., 699.
1885. Oppenheim. Berl. entom. zeitschr., xxix: 346 (renuesii).
See also Satyrites reynesii.

5813. Lithopsyche ———. (Nymphalidæ.)

Locality: Florissant, Colo. Horizon: Oligocene.

1883. Scudder. Ann. rep. U. S. geol. surv. terr., xii: 280 (name only).
1885. " Zittel, Handb. palaeont., i, th. ii: 814 (name only).
1886. " Zittel-Barrois, Traité de paléont., ii: 815 (name only).
1886. " Bull. U. S. geol. surv., No. 31: 95 (name only).
See also Lithopsyche styx.

5814. Lithopsyche antiqua. (Phalænidæ.)

Compared with Calospira spp., Craspedosis, Præsos.

Locality: Gurnet Bay, Isle of Wight. Horizon: Bembridge Limestone.

1889. Butler. Proc. zool. soc. Lond., 1889: 294. *Pl.* 31, *figs.* 3, 6.

5815. Lithopsyche styx (Nymphalidæ.)

Locality: Florissant, Colo. Horizon: Oligocene.

1889. Scudder. Ann. rep. U. S. geol. surv., viii: 454–457. *Pl.* 52, *figs.* 11, 16, 17.
See also Lithopsyche ———.

5816. Lithosia ———. (Bombycidæ.)

Locality: Gurnet Bay, Isle of Wight. Horizon: Bembridge Limestone.

1879. Woodward. Quart. journ. geol. soc. Lond., xxxv: 344.
1879. " Geol. mag., (n. s.), v: 88.

5817. Macroglossa ——— (larva). (Sphingidæ.)

Compared with M. fuciformis.

Locality: Oeningen, Baden. Horizon: Tortonian.

1888. Schöberlin. Soc. entom., iii: 69.

5818. Mylothrites pluto. (Papilionidæ.)

Locality: Radoboj, Croatia. Horizon: Mayencian.

1875. Scudder. Mem. Amer. assoc. adv. sc., i: 45–51. *Pl.* 2, *figs.* 2, 7, 15 ?, 17; *fig.* 1 on *p.* 50.
1877. Kirby. Synon. catal. diurn. lepid., suppl., 793.
1885. Oppenheim. Berl. entom. zeitschr., xxix: 348.
See also Vanessa pluto, etc.

5819. Neorinopis sepulta. (Nymphalidæ.)

Locality: Aix, France. Horizon: Ligurian.

1873. Butler. Lepid. exot., 127. *Pl.* 48, *fig.* 3.
1873. “ Geol. mag., x: 3. *Pl.* 1, *fig.* 3.
1875. Scudder. Mem. Amer. assoc. adv. sc., i: 14–33. *Pl.* 1, *figs.* 8–17.
1885. Oppenheim. Berl. entom. zeitschr., xxix: 346.
See also Cyllo sepulta, etc.

5820. Nepticula fossilis (mine). (Tineidæ.)

Localities: Rott, Salzhausen, Germany. Horizon: Aquitanian.

1862. Heyden. Paleontogr., x: 77–78 (in leaf of Juglans acuminata Br.). *Pl.* 10, *fig.* 2.
1865. Heyd.-Heyd. Paleontogr., xiv: 35.
1885. Scudder. Zittel, Handb. palaeont., i, th. ii: 813. *Fig.* 1090.
1886. “ Zittel-Barrois, Traité de paléont., ii: 815. *Fig.* 1107.

5821. Noctuites deperditus. (Noctuidæ.)

Locality: Aix, France. Horizon: Ligurian.

1856. Heer. Viert. naturf. gesellsch. Zürich, i: 30. *Pl.* 2, *fig.* 8.
1885. Oppenheim. Berl. entom. zeitschr., xxix: 346.

5822. Noctuites effosus. (Noctuidæ.)

Locality: Radoboj, Croatia. Horizon: Mayencian.

1849. Heer. Insektenf. tertiärg. Oeningen, ii: 185–186 (effosa). *Pl.* 14, *fig.* 10.
1852. Giebel. Deutschl. petref., 644.
1856. “ Insect. d. vorwelt, 190.
1885. Oppenheim. Berl. entom. zeitschr., xxix: 348.

5823. Noctuites haidingeri. (Noctuidæ.)

Locality: Radoboj, Croatia. Horizon: Mayencian.

1849. Heer. Insektenf. tertiärg. Oeningen, ii: 185. *Pl.* 14, *fig.* 9.
1852. Giebel. Deutschl. petref., 644.
1856. “ Insect. d. vorwelt, 190.
1885. Oppenheim. Berl. entom. zeitschr., xxix: 348.

5824. Noctuites incertissimus. (Noctuidæ.)

Locality: Auvergne, France. Horizon: Aquitanian.

1870. Oustalet. Ann. sc. géol., ii, art. 3, 158 (incertissima). *Pl.* 1, *fig.* 18.
1885. Oppenheim. Berl. entom. zeitschr., xxix: 348–349.

5825. Nymphalis? ———. (Nymphalidæ.)

Locality: Aix, France. Horizon: Ligurian.

1838. Duponchel. Ann. soc. ent. France, vii, bull. ent., 51–52.
See also Cyllo sepulta, etc.

5826. Nymphalis atava. (Nymphalidæ.)

Locality: Radoboj, Croatia. Horizon: Mayencian.

1877. Kirby. Synon. catal. diurn. lepid., suppl., 733.
See also Sphinx atava, etc.

5827. Nymphalis atavina. (Nymphalidæ.)

Locality: Radoboj, Croatia. Horizon: Mayencian.

1872. Kirby. Synon. catal. diurn. lepid., 648 (atovina).
See also Sphinx atava, etc.

Nymphalis atovina. See Nymphalis atavina.

5828. Nymphalites ———. (Nymphalidæ.)

Locality: Florissant, Colo. Horizon: Oligocene.

1889. Scudder. Butt. N. Engl., i: 758 (name only).
See also Nymphalites obscurus.

5829. Nymphalites obscurus. (Nymphalidæ.)

Locality: Florissant, Colo. Horizon: Oligocene.

1889. Scudder. Ann. rep. U. S. geol. surv., viii: 457–459 (obscurum). *Pl.* 53, *figs.* 10–13.
See also Nymphalites ———.

5830. Ocnerites macroceraticus. (Bombycidæ.)

Locality: Rott, Rhenish Prussia. Horizon: Aquitanian.

1885. Oppenheim. Berl. entom. zeitschr., xxix: 347. *Pl.* 12, *fig.* 15.

5831. Pamphilites abditus. (Hesperidæ.)

Locality: Aix, France. Horizon: Ligurian.

1875. Scudder. Mem. Amer. assoc. adv. sc., i: 68–69 (abdita). *Pl.* 3, *figs.* 14, 17, 18.
1877. Kirby. Synon. catal. diurn. lepid., suppl., 828.
1885. Oppenheim. Berl. entom. zeitschr., xxix: 346.

5832. Papilio (Satyrus) ———. (Nymphalidæ.)

Locality: Aix, France. Horizon: Ligurian.

1829. Serres. Géogn. terrains tert., 230.
See also Cyllo sepulta, etc.

5833. Phalæna? ———. (Phalænidæ.)

Locality: Aix, France. Horizon: Ligurian.

1829. Curtis. Edinb. new phil. journ., vii: 295.
1829. " Murchison-Lyell, Tert. form. Aix, 11.

5834. Phalæna geometra (recent). (Phalænidæ.)

Locality: Copal. Horizon: Recent.

1776. Bloch. Beschäft. berl. gesellsch. naturf. freunde, ii: 180–183. *Pl.* 5, *fig.* 22.

5835. Phalænites crenatus. (Phalænidæ.)

Locality: Radoboj, Croatia. Horizon: Mayencian.

1849. Heer. Insektenf. tertiärg. Oeningen, ii: 186–187 (crenata). *Pl.* 14, *fig.* 11.
1852. Giebel. Deutschl. petref., 644.
1856. " Insect. d. vorwelt, 190.
1885. Oppenheim. Berl. entom. zeitschr., xxix: 348.

5836. Phalænites obsoletus. (Phalænidæ.)

Locality: Radoboj, Croatia. Horizon: Mayencian.

1849. Heer. Insektenf. tertiärg. Oeningen, ii: 187 (obsoleta). *Pl.* 14, *fig.* 12.
1852. Giebel. Deutschl. petref., 644.
1856. " Insect. d. vorwelt, 190–191.
1885. Oppenheim. Berl. entom. zeitschr., xxix: 348.

5837. Phalænites proserpinæ. (Phalænidæ.)

Locality: Aix, France. Horizon: Ligurian.

1861. Heer. Saporta, Heer, Rech. climat pays tert., 153 (undescr.).

5838. Pierites freyeri. (Papilionidæ.)

Locality: Radoboj, Croatia. Horizon: Mayencian.

1849. Heer. Insektenf. tertiärg. Oeningen, ii: 182–183. *Pl.* 14, *fig.* 6.
1850. " Nouv. mém soc. helv., xi: 182–183. *Pl.* 14, *fig.* 6.
1852. Giebel. Deutschl. petref., 644.
1856. " Insect. d. vorwelt, 187.
1877. Kirby. Synon. catal. diurn. lepid., suppl., 806

See also Pontia freyeri.

5839. Pontia freyeri. (Papilionidæ.)

Locality: Radoboj, Croatia. Horizon: Mayencian.

1875. Scudder. Mem. amer. assoc. adv. sc., i: 54–56. *Pl.* 2, *figs.* 16, 18.
1885. Oppenheim. Berl. entom. zeitschr., xxix: 348.

See also Pierites freyeri.

5840. Prodryas persephone. (Nymphalidæ.)

Locality: Florissant, Colo. Horizon: Oligocene.

1878. Scudder. Bull. U. S. geol. surv. terr., iv: 524–526.
1880. Dawson. Chain of life, 149. *Fig.* 131 on *p.* 150.
1885. Scudder. Zittel, Handb. palaeont., i, th. ii: 814. *Fig.* 1092.
1886. " Zittel-Barrois, Traité de paléont., ii: 815. *Fig.* 1109.
1889. " Butt. N. E., i: 758, 760. *Pl.* 16, *fig.* 6.
1889. " Ann. rep. U. S. geol. surv., viii: 443–448. *Pl.* 52, *fig.* 1–10.
1890. Lesley. Dict. foss. Penns., ii: 746. *Fig.*

5841. Prolibythea vagabunda. (Nymphalidæ.)

Locality: Florissant, Colo. Horizon: Oligocene.

1889. Scudder. Butt. N. E., i: 759 (name only).
1889. " Ann. rep. U. S. geol. surv., viii: 465–467. *Pl.* 53, *figs.* 4–9.

5842. Psecadia mortuella. (Tineidæ.)

Locality: Florissant, Colo. Horizon: Oligocene.

1890. Scudder. Tert. ins. N. A., 603. *Pl.* 15, *figs.* 12, 17.

Psyche pincella. See Psyche pineela.

5843. Psyche pineela. (Bombycidæ.)

Locality: Oeningen, Baden. Horizon: Tortonian.

1849.	Heer.	Insektenf. tertiärg. Oeningen, ii: 184–185. *Pl.* 14, *fig.* 8.
1852.	Giebel.	Deutschl. petref., 644.
1856.	"	Insect. d. vorwelt. 189 (pincella).
1865.	Heer.	Urwelt der Schweiz, 397.
1872.	"	Monde prim. Suisse, 486.
1876.	"	Prim. world Switz., ii: 56.
1879.	"	Urwelt der Schweiz, 2e aufl., 422.
1885.	Oppenheim.	Berl. entom. zeitschr., xxix: 349.

5844. Pyralites obscurus. (Pyralidæ.)

Locality: Aix, France. Horizon: Ligurian.

1856.	Heer.	Viert. naturf. gesellsch. Zürich, i: 30. *Pl.* 2, *fig.* 6.
1885.	Oppenheim.	Berl. entom. zeitschr., xxix: 346.

Satyrites beynesii. See Satyrites reynesii.

5845. Satyrites incertus (larva). (Nymphalidæ.)

Locality: Aix, France. Horizon: Ligurian.

1876.	Daudet.	Rev. mag. zool., (3), iv: 415–424. *Pl.* 17, *figs.* 1–4.
1876.	"	Petites nouv. entom., No. 145.
1885.	Oppenheim.	Berl. entom. zeitschr., xxix: 346.
1885.	Scudder.	Zittel, Handb. palaeont., i, th. ii: 814. *Fig.* 1091.
1886.	"	Zittel-Barrois, Traité de paléont., ii: 815. *Fig.* 1108.

5846. Satyrites reynesii. (Nymphalidæ.)

Locality: Aix, France. Horizon: Ligurian.

1872.	Scudder.	Rev. mag. zool., 1871–'72: 66–72. *Pl.* 7.
1872.	"	Descr. nouv. pap. foss., 1–7. *Pl.*
1872.	"	Geol. mag., ix: 532–533. *Pl.* 13, *figs.* 2, 3.
1872.	"	Descr. new foss. butt., 1–2. *Pl.*, *figs.* 2, 3.
1873.	Brodie.	Distr. corr. foss. insects, 8–9 (beynesii).

See also Lethites reynesii.

Satyrus ———. See Papilio (Satyrus) ———.

5847. Sesia ———. (Sphingidæ.)

Compared with S. brosiformis.

Locality: Aix, France. Horizon: Ligurian.

1829.	Serres.	Géogn. terrains tert. 230.

5848. Sesia ———. (Sphingidæ.)

Compared with S. vespiformis.

Locality: Aix, France. Horizon: Ligurian.

1829.	Serres.	Géogn. terrains tert., 230.

5849. Sphinx ———. (Sphingidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1830.	Berendt.	Insekten im bernstein, 37.

5850. **Sphinx atava.** (Nymphalidæ.)

Locality: Radoboj, Croatia. Horizon: Mayencian.

1843. Charpentier. Verhandl. leop.-carol. deutsche akad., xx: 408–409. *Pl.* 22, *fig.* 4.
See also Vanessa atavina, Nymphalis atavina, N. atava, Eugonia atava.

5851. **Stolopsyche** ———. (Papilionidæ.)

Locality: Florissant, Colo. Horizon: Oligocene.

1889. Scudder. Butt. N. Engl., i: 759 (name only).
See also Stolopsyche libytheoides.

5852. **Stolopsyche libytheoides.** (Papilionidæ.)

Locality: Florissant, Colo. Horizon: Oligocene.

1889. Scudder. Ann. rep. U. S. geol. surv., viii: 468. *Pl.* 53, *figs.* 1–3.
See also Stolopsyche ———.

5853. **Thaites ruminianus.** (Papilionidæ.)

Locality: Aix, France. Horizon: Ligurian.

1861. Saporta. Heer, Rech. climat pays tert., trad. Gaudin, 153 (ruminiana) (without descr.).
1861. Heer. Rech. climat pays tert., trad. Gaudin, 205 (without descr.).
1872. Saporta. Ann. sc. nat., (5), bot., xv: 343 (without descr.).
1872. " Rev. flore gypses d'Aix, i: 70 (without descr.).
1875. Scudder. Mem. amer. assoc. adv. sc., i: 60–62. *Pl.* 3, *figs.* 1, 3, 6–10.
1877. Kirby. Synon. catal. diurn. lepid., suppl., 809.
1879. Strecker. Butt. moths in conn. agric., 19.
1885. Oppenheim. Berl. entom. zeitschr., xxix: 346.

Thanatites juvenalis. See Thanatites vetulus.

5854. **Thanatites vetulus.** (Hesperidæ.)

Locality: Rott, Rhenish Prussia. Horizon: Aquitanian.

1875. Scudder. Mem. Amer. assoc. adv. sc., i: 63 (vetula) (plate marked Thanatites juvenalis by error). *Pl.* 3, *figs.* 12, 16.
1877. Kirby. Synon. catal. diurn. lepid., suppl., 835.
1885. Oppenheim. Berl. entom. zeitschr., xxix: 347.
See also Vanessa vetula, Araschnia vetula.

5855. **Tinea** ———. (Tineidæ.)

Compared with T. culmella and T. pellionella.

Locality: Prussian amber. Horizon: Ligurian.

1835. Gravenhorst. Uebers. schles. gesellsch. vaterl. cult., 1834: 92.

5856. **Tinea** ———. (Tineidæ.)

Compared with T. pellionella.

Locality: Prussian amber. Horizon: Ligurian.

1856. Menge. Progr. petrischule Danzig, 1856: 29.

5857. **Tinea** ——— (larva). (Tineidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1856. Menge. Progr. petrischule Danzig, 1856: 29.

5858. Tinea ? ——— (pupa). (Tineidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1856.	Menge.	Progr. petrischule Danzig, 1856: 29.

5859. Tinea antiqua. (Tineidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1822.	Presl.	Deliciæ pragenses, i: 199–200.

5860. Tineites crystalli. (Tineidæ.)

Locality: Ufalei, Siberia. Horizon: "Bergkrystall."

1876.	Kawall.	Bull. soc. imp. nat. Mosc., 1876: 171–172.

5861. Tortrix ———. (Tortricidæ.)

Compared with T. lecheana, etc.

Locality: Prussian amber. Horizon: Ligurian.

1835.	Gravenhorst.	Uebers. schles. gesellsch. vaterl. cult., 1834: 92.

5862. Triphæna ——— (pupa). (Noctuidæ.)

Locality: Quercy, France. Horizon: ———.

1877.	Gervais.	Journ. de zool., vi: 68.

5863. Vanessa atavina. (Nymphalidæ.)

Locality: Radoboj, Croatia. Horizon: Mayencian.

1849.	Heer.	Insektenf. tertiärg. Oeningen, ii: 177–179 (attavina). *Pl.* 14, *fig.* 3.
1850.	"	Nouv. mém. soc. helv., xi: 177–179. *Pl.* 14, *fig.* 3.
1852.	Giebel.	Deutschl. petref., 644.
1856.	"	Insect. d. vorwelt, 186.
1872.	Kirby.	Synon. catal. diurn. lepid., 185 (atovina).

See also Sphinx atava, etc.

Vanessa atovina. See Vanessa atavina.

Vanessa attavina. See Vanessa atavina.

5864. Vanessa pluto. (Papilionidæ.)

Locality: Radoboj, Croatia. Horizon: Mayencian.

1849.	Heer.	Insektenf. tertiärg. Oeningen, ii: 179–182. *Pl.* 14, *figs.* 4, 5.
1850.	"	Nouv. mém. soc. helv., xi: 179–182. *Pl.* 14, *figs.* 4, 5.
1852.	Giebel.	Deutschl. petref., 644.
1854.	Pictet.	Traité de paléont., 2e éd., ii: 393. *Pl.* 40, *fig.* 21.
1856.	Giebel.	Insect. d. vorwelt, 186–187.
1865.	Lyell.	Elem. geol., 6th ed., 243. *Fig.* 179.

See also Argynnis pluto, Junonia pluto, Mylothrites pluto.

5865. Vanessa vetula. (Hesperidæ.)

Locality: Rott, Rhenish Prussia. Horizon: Aquitanian.

1859.	Heyden.	Palaeontogr., viii: 12–13. *Pl.* 1, *fig.* 10.

See also Araschnia vetula, Thanatites vetulus.

5866. Ypsolophus insignis. (Tineidæ.)

Locality: Vicinity Bonn, Rhenish Prussia. Horizon: Aquitanian?

1837.	Germar.	Fauna insect. Europæ, xix: 20. *Pl.* 20.
1852.	Giebel.	Deutschl. petref., 644.
1856.	"	Insect. d. vorwelt, 191.

5867. Zygæna ——. (Bombycidæ.)

Locality: Aix, France. Horizon: Ligurian.

1829. Serres. Géogn. terrains tert., 230.

HYMENOPTERA.

5868. —— ——.

Locality: Rouffach, Alsatia. Horizon: Tongrien.

1881. Bleicher. Bull. soc. géol. France, (3), viii: 226.

5869. —— ——.

Locality: Prussian amber. Horizon: Ligurian.

1841. Ehrenberg. Froriep., Neue notizen, xix: 120.

5870. —— ——.

Locality: Sinigaglia, Italy. Horizon: Helvetian?.

1842. Procaccini. Nuov. ann. sc. nat., vii: 449.

5871. —— ——.

Locality: Gurnet Bay, Isle of Wight. Horizon: Bembridge Limestone.

1879. Woodward. Quart. journ. geol. soc. Lond., xxxv: 344.

—— ——. See III, DIPTERA —— —— (Mycetophilidæ) Guérin.

5872. —— —— (several). (Andrenidæ.)

Locality: Florissant, Colo. Horizon: Oligocene.

1881. Scudder. Bull. U. S. geol. surv. terr., vi: 290.
1883. " Ann. rep. U. S. geol. surv. terr., xii: 280.

5873. —— ——. (Apidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1831. Burmeister. Oken, Isis, 1831: 1100.

5874. —— ——. (Apidæ.)

Locality: Chiavon, Italy. Horizon: ——.

1881. Malfatti. Atti. soc. ital. sc. nat., xxiv: 98.
1881. " Bibl. ins. foss. ital., 10.

5875. —— —— (several). (Apidæ.)

Locality: Florissant, Colo. Horizon: Oligocene.

1881. Scudder. Bull. U. S. geol. surv. terr., vi: 290.
1883. " Ann. rep. U. S. geol. surv. terr., xii: 280.

5876. —— —— (several). (Braconidæ.)

Locality: Florissant, Colo. Horizon: Oligocene.

1881. Scudder. Bull. U. S. geol. surv. terr., vi: 290.
1883. " Ann. rep. U. S. geol. surv. terr., xii: 280.

5877. —— ——. (Braconidæ.)

Locality: Green River, Wyo. Horizon: Oligocene.

1890. Scudder. Tert. ins. N. A, 607. *Pl.* 10, *fig.* 18.

5878. ——— ———. (Braconidæ.)

Locality: Green River, Wyo. Horizon: Oligocene.
1890. Scudder. Tert. ins. N. A., 607–608. *Pl.* 10, *fig.* 28.

5879. ——— ——— (several). (Chalcididæ.)

Locality: Florissant, Colo. Horizon: Oligocene.
1881. Scudder. Bull. U. S. geol. surv. terr., vi: 290.
1883. " Ann. rep. U. S. geol. surv. terr., xii: 280.

5880. ——— ———. (Chrysididæ.)

Locality: Prussian amber. Horizon: Ligurian.
1856. Menge. Progr. petrischule Danzig, 1856: 26.

5881. ——— ——— (several). (Chrysididæ.)

Locality: Florissant, Colo. Horizon: Oligocene.
1881. Scudder. Bull. U. S. geol. surv. terr., vi: 290.
1883. " Ann. rep. U. S. geol. surv. terr., xii: 280.

5882. ——— ———. (Crabronidæ.)

Locality: Prussian amber. Horizon: Ligurian.
1856. Menge. Progr. petrischule Danzig, 1856: 25.

5883. ——— ———. (Cynipidæ.)

Locality: Prussian amber. Horizon: Ligurian.
1856. Menge. Progr. petrischule Danzig, 1856: 25.

5884. ——— ——— (several). (Cynipidæ.)

Locality: Florissant, Colo. Horizon: Oligocene.
1881. Scudder. Bull. U. S. geol. surv. terr., vi: 290.
1883. Scudder. Ann. rep. U. S. geol. surv. terr., xii: 280.

5885. ——— ———. (Formicidæ.)

Locality: Brunstatt, Alsatia. Horizon: Middle Oligocene.
1885. Foerster. Tagebl. versamml. deutsch. naturf., lviii: 392 (ameisen).
1885. " Mitth. oberelsäss. tertiär., 7.

5886. ——— ——— (Formicidæ.)

Locality: Nantucket amber. Horizon: ———.
1879. Goldsmith. Proc. acad. nat. sc. Phil., 1879: 207 (ants).

5887. ——— ———. (Formicidæ.)

Locality: Prussian amber. Horizon: Ligurian.
1835. Gravenhorst. Uebers. schles. gesellsch. vaterl. cult., 1834: 92.

5888. ——— ———. (Formicidæ.)

Locality: Prussian amber. Horizon: Ligurian.
1819. Schweigger. Beobacht. naturh. reisen, 119. *Pl.* 8, *figs.* 70, 70*ab*.

5889. ——— ——— (several). (Formicidæ.)

Locality: Florissant, Colo. Horizon: Oligocene.
1881. Scudder. Bull. U. S. geol. surv. terr., vi: 290.
1883. Scudder. Ann. rep. U. S. geol. surv. terr., xii: 280.

5890. ——— ——— (several). (Formicidæ–Myrmicinæ.)

Locality: Florissant, Colo. Horizon: Oligocene.

1881. Scudder. Bull. U. S. geol. surv. terr., vi: 290.
1883. " Ann. rep. U. S. geol. surv. terr., xii: 280.

5891. ——— ———. (Ichneumonidæ.)

Compared with Bassus (Euceros) crassicornis Grav.

Locality: Prussian amber. Horizon: Ligurian.

1832. Burmeister. Handb. entom., i: 636.
1836. " Man. entom., 577.
See also Bassus ——— Keferstein.

5892. ——— ———. (Ichneumonidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1856. Menge. Progr. petrischule Danzig, 1856: 24.

5893. ——— ——— (several). (Ichneumonidæ.)

Locality: Florissant, Colo. Horizon: Oligocene.

1881. Scudder. Bull. U. S. geol. surv. terr., vi: 290.
1883. " Ann. rep. U. S. geol. surv. terr., xii: 280.

5894. ——— ———. (Mutillidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1856. Menge. Progr. petrischule Danzig, 1856: 25.

——— ——— (Myrmicidæ). See ——— ——— (Formicinæ–Myrmicinæ).

5895. ——— ——— (2 sp.). (Pompilidæ.)

Locality: Florissant, Colo. Horizon: Oligocene.

1881. Scudder. Bull. U. S. geol. surv. terr., vi: 290.
1883. " Ann. rep. U. S. geol. surv. terr., xii: 280.

5896. ——— ——— (several). (Poneridæ.)

Locality: Florissant, Colo. Horizon: Oligocene.

1881. Scudder. Bull. U. S. geol. surv. terr., vi: 290.
1883. " Ann. rep. U. S. geol. surv. terr., xii: 280.

5897. ——— ———. (Proctrotrupidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1886. Brischke. Schrift. naturf. gesellsch. Danzig, n. f., vi, iii: 279.
1886. " Hym. bernst., 2.

5898. ——— ———. (Proctrotrupidæ.)

Locality: Sicilian amber. Horizon: ———.

1881. Malfatti. Atti acad. linc., (3), trans., v: 82. *Fig.* 1 on *p.* 83.

5899. ——— ———. (Pteromalidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1856. Menge Progr. petrischule Danzig, 1856: 24–25.

5900. ——— ———. (Sphegidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1856. Menge. Progr. petrischule Danzig, 1856: 26.

5901. ——— ——— (several). (Sphegidæ.)

Locality: Florissant, Colo. Horizon: Oligocene.

1881. Scudder. Bull. U. S. geol. surv. terr., vi: 290.
1883. " Ann. rep. U. S. geol. surv. terr., xii: 280.

5902. ——— ——— (several). (Tenthredinidæ.)

Locality: Florissant, Colo. Horizon: Oligocene.

1881. Scudder. Bull. U. S. geol. surv. terr., vi: 290.
1883. " Ann. rep. U. S. geol. surv. terr., xii: 280.

5903. ——— ———. (Uroceridæ.)

Locality: Florissant, Colo. Horizon: Oligocene.

1881. Scudder. Bull. U. S. geol. surv. terr., vi: 290.
1883. " Ann. rep. U. S. geol. surv. terr., xii: 280.

5904. ——— ———. (Vespidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1886. Brischke. Schrift. naturf. gesellsch. Danzig, n. f. vi, iii: 278.
1886. " Hym. bernst., 1.

5905. ——— ——— (several). (Vespidæ.)

Locality: Florissant, Colo. Horizon: Oligocene.

1881. Scudder. Bull. U. S. geol. surv. terr., vi: 290.
1883. " Ann. rep. U. S. geol. surv. terr., xii: 280.

Acœnites lividus. See Acœnitus lividus.

5906. Acœnitus lividus. (Ichneumonidæ.)

Locality: Radoboj, Croatia. Horizon: Mayencian.

1849. Heer. Insektenf. tertiärg. Oeningen, ii: 169–170. *Pl.* 13, *fig.* 14.
1852. Giebel. Deutschl. petref., 647.
1856. " Insect. d. vorwelt, 156–157 (Acœnites).

5907. Agathis ———. (Braconidæ.)

Locality: Aix, France. Horizon: Ligurian.

1829. Serres. Géogn. terrains tert., 229.

5908. Amblyteles ———. (Ichneumonidæ.)

Locality: Oeningen, Baden. Horizon: Tortonian.

1888. Schöberlin. Soc. entom., iii: 61.

5909. Ammophila ———. (Sphegidæ.)

Locality: ———. Horizon: ———.

1846. Giebel. Paläozool., 280.

5910. Ammophila ———. (Sphegidæ.)

Locality: Florissant, Colo. Horizon: Oligocene.

1881. Scudder. Bull. U. S. geol. surv. terr., vi: 290.
1883. " Ann. rep. U. S. geol. surv. terr., xii: 280.

5911. Ammophila annosa. (Sphegidæ.)

Compared with A. sabulosa.

Locality: Oeningen, Baden. Horizon: Tortonian.

1865. Heer. Urwelt der Schweiz, 387.
1872. " Monde prim. Suisse, 473.
1876. " Prim. world Switz., ii: 44.
1879. " Urwelt der Schweiz, 2^e aufl., 412.

5912. Ammophila gigantea. (Sphegidæ.)

Locality: Oeningen, Baden. Horizon: Tortonian.

1888. Schöberlin. Soc. entom., iii: 61 (undescr.).

5913. Ammophila inferna. (Sphegidæ.)

Locality: Oeningen, Baden. Horizon: Tortonian.

1865. Heer. Urwelt der Schweiz, 387. *Figs.* 290*a*, *b* on *p*. 386.
1872. " Monde prim. Suisse. 474. *Figs.* 290*a*, *b*.
1876. " Prim. world Switz, ii, 45. *Figs.* 290*a*, *b* on *p*. 44.
1879. " Urwelt der Schweiz, 2^e aufl, 412. *Figs.* 332*a*, *b*.

5914. Ammophila minima. (Sphegidæ.)

Locality: Oeningen, Baden. Horizon: Tortonian.

1888. Schöberlin. Soc. entom., iii: 61 (undescr.).

5915. Andrena ——. (Apidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1886. Brischke. Schrift. naturf. gesellsch. Danzig, n. f. vi, iii: 278.
1886. " Hym. bernst., 1.

5916. Anomalon ——. (Ichneumonidæ,)

Compared with A. variegatum.

Locality: Aix, France. Horizon: Ligurian.

1829. Serres. Géogn. terrains tert., 229, 267.

5917. Anomalon protogæum. (Ichneumonidæ.)

Locality: Oeningen, Baden. Horizon: Tortonian.

1849. Heer. Insektenf. tertiärg. Oeningen, ii: 167–168. *Pl.* 13, *fig.* 12.
1852. Giebel. Deutschl. petref., 647.
1856. " Insect. d. vorwelt, 156.

5918. Anomma rubella (recent). (Formicidæ.)

Locality: Prussian amber. Horizon: Ligurian.

[1850. Savage. Proc. acad. nat. sc. Philad., 1850: 196.]
1868. Smith. Quart. journ. sc., v: 184 (or an allied species). *Pl.*, *fig.* 3.

5919. Anthophora ? ——. (Apidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1886. Brischke. Schrift. naturf. gesellsch. Danzig, n. f., vi., iii: 278.
1886. " Hym. bernst., 1.

5920. Anthophora ? ——. (Apidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1856. Menge. Progr. petrischule Danzig, 1856: 26.

5921. **Anthophora effossa.** (Apidæ.)

Locality: Rott, Rhenish Prussia. Horizon: Aquitanian.

1862. Heyden. Palaeontogr., x: 76. *Pl.* 10, *fig.* 10.

5922. **Anthophorites gaudryi.** (Apidæ.)

Compared with A. parietaria.

Locality: Corent, France. Horizon: Aquitanian.

1870. Oustalet. Ann. sc. géol., ii, art. 3: 104–105. *Pl.* 2, *figs.* 11–13.
1871. " Bibl. hautes étud., sc. nat., iv, art. 7, 104–105. *Pl.* 2, *figs.* 11–13.

5923. **Anthophorites longævus.** (Apidæ.)

Localities: Oeningen, Baden; Radoboj, Croatia. Horizons: Tortonian, Mayencian.

1867. Heer. Neue denkschr. schweiz. gesellsch., xxii, mem. 4: 5 (longæva). *Pl.* 3, *figs.* 12, 13.
1867. " Foss. hymen., 5. *Pl.* 3, *figs.* 12, 13.

5924. **Anthophorites mellona.** (Apidæ.)

Locality: Oeningen, Baden. Horizon: Tortonian.

1849. Heer. Insektenf. tertiärg. Oeningen, ii: 97–98. *Pl.* 7, *fig.* 4.
1852. Giebel. Deutschl. petref., 645.
1856. " Insect. d. vorwelt, 183.

5925. **Anthophorites thoracicus.** (Apidæ.)

Locality: Radoboj, Croatia. Horizon: Mayencian.

1867. Heer. Neue denkschr. schweiz. gesellsch., xxii, mem. 4: 6 (thoracica). *Pl.* 3, *fig.* 14.
1867. " Foss. hymen., 6. *Pl.* 3, *fig.* 14.

5926. **Anthophorites titania.** (Apidæ.)

Locality: Oeningen, Baden. Horizon: Tortonian.

1849. Heer. Insektenf. tertiärg. Oeningen, ii: 99. *Pl.* 7, *fig.* 5.
1852. Giebel. Deutschl. petref., 645.
1856. " Insect. d. vorwelt, 183.

5927. **Anthophorites tonsus.** (Apidæ.)

Locality: Oeningen, Baden. Horizon: Tortonian.

1849. Heer. Insektenf. tertiärg. Oeningen, ii: 99–100 (tonsa). *Pl.* 7, *fig.* 6.
1852. Giebel. Deutschl. petref., 645.
1856. " Insect. d. vorwelt, 183–184.

5928. **Anthophorites veteranus.** (Apidæ.)

Locality: Oeningen, Baden. Horizon: Tortonian.

1849. Heer. Insektenf. tertiärg. Oeningen, ii: 100 (veterana). *Pl.* 7, *fig.* 7.
1852. Giebel. Deutschl. petref., 645.
1856. " Insect. d. vorwelt, 184.

5929. **Aphænogaster berendti.** (Formicidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1868. Mayr. Ameis. balt. bernst., 82. *Pl.* 4, *figs.* 78–79.

5930. Aphænogaster fuliginosa. (Formicidæ.)

Locality: Radoboj, Croatia. Horizon: Mayencian.

1867. Mayr. Jahrb. k.-k. geol. reichsanst., xvii: 57 (fulingiosa).
1867. " Stud. Rad. form., 11.
1867. Heer. Neue denkschr. schweiz. gesellsch., xxii, mem. 4: 42 (says it can not be an Aphænogaster).
1867. " Foss. hymen., 42.
See also Ponera fuliginosa, etc.

Aphænogaster fulingiosa. See Aphænogaster fuliginosa.

5931. Aphænogaster livida. (Formicidæ.)

Locality: Radoboj, Croatia. Horizon: Mayencian.

1867. Mayr. Jahrb. k.-k. geol. reichsanst., xvii: 57 (quotes Heer's sp. as "Ponera" livida).
1867. " Stud. Rad. form., 11.
See also Poneropsis livida.

5932. Aphænogaster longaeva. (Formicidæ.)

Compared with A. berendti Mayr.

Locality: Quesnel, British Columbia. Horizon: ——.

1877. Scudder. Rep. geol. surv. Can., 1875-'76: 267.
1877. " Ins. tert. Quesn., 2.
1877. " Rapp. opér. comm. géol. Can., 1875-'76: 295-296.
1890. " Tert. ins. N. A., 615. *Pl.* 3, *fig.* 28.

5933. Aphænogaster lugubris. (Formicidæ.)

Locality: Radoboj, Croatia. Horizon: Mayencian.

1867. Mayr. Jahrb. k.-k. geol. reichsanst., xvii: 57.
1867. " Stud. Rad. form., 11.
See also Poneropsis lugubris, etc.

5934. Aphænogaster sommerfeldti. (Formicidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1868. Mayr. Ameis. balt. bernst., 81-82. *Pl.* 4, *fig.* 76-77.

5935. Apiaria dubia. (Apidæ.)

Locality: Orsberg, (Rheuish Prussia?). Horizon: Miocene.

1849. Germar. Zeitschr. deutsch. geol. gesellsch., i: 66. *Pl.* 2, *fig.* 8.
See also Osmia dubia.

5936. Apis adamitica. (Apidæ.)

Compared with A. mellifica L.

Locality: Oeningen, Baden. Horizon: Tortonian.

1865. Heer. Urwelt der Schweiz, 386. *Fig.* 287.
1867. " Neue denkschr. schweiz. gesellsch., xxii, mem. 4: 4. *Pl.* 3, *fig.* 11.
1867. " Foss. hymen., 4. *Pl.* 3, *fig.* 11.
1872. " Monde prim. Suisse, 473. *Fig.* 287 on *p.* 474.
1876. " Prim. world Switz., ii: 43. *Fig.* 287 on *p.* 44.
1879. " Urwelt der Schweiz, 2^e aufl., 412. *Fig.* 329.

5937. **Apis dormitans.** (Apidæ.)

Locality: Rott, Rhenish Prussia. Horizon: Aquitanian.

1862. Heyden. Palaeontogr., x: 76–77. *Pl.* 10, *fig.* 8.

5938. **Apis proava.** (Apidæ.)

Compared with A. mellifica.

Locality: Prussian amber. Horizon: Ligurian.

1856. Menge. Progr. petrischule Danzig, 1856: 26–27.

5939. **Ascogaster** ———. (Braconidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1886. Brischke. Schrift. naturf. gesellsch. Danzig, n. f., vi, iii: 279.
1886. " Hym. bernst., 2.

5940. **Attopsis** ——— (several). (Formicidæ.)

Locality: Brunstatt, Alsatia. Horizon: Middle Oligocene.

1888. Foerster. Mitth. comm. geol. Elsass-Lothr., i: 164.
1889. " Mitth. comm. geol. Elsass-Lothr., ii: 103.

5941. **Attopsis anthracina.** (Formicidæ.)

Locality: Radoboj, Croatia. Horizon: Mayencian.

1849. Heer. Insektenf. tertiärg. Oeningen, ii: 156–157. *Pl.* 12, *fig.* 12.
1852. Giebel. Deutschl. petref., 646.
1856. " Insect. d. vorwelt, 177.
1867. Heer. Neue denkschr. schweiz. gesellsch., xxii, mem. 4: 29.
1867. " Foss. hymen., 29.
1867. Mayr. Jahrb. k.-k. geol. reichsanst., xvii: 58.
1867. " Stud. Rad. form., 12.

5942. **Attopsis longipennis.** (Formicidæ.)

Locality: Radoboj, Croatia. Horizon: Mayencian.

1849. Heer. Insektenf. tertiärg. Oeningen, ii: 155–156. *Pl.* 12, *fig.* 11.
1852. Giebel. Deutschl. petref., 646.
1854. Pictet. Traité de paléont., 2ᵉ éd., ii: 383. *Pl.* 40, *fig.* 22.
1853–'56. Bronn. Lethæa geogn., 3ᵉ aufl., iii: 646–647. *Pl.* 42′, *figs.* 23*ab*.
1856. Giebel. Insect. d. vorwelt, 177.

5943. **Attopsis longipes.** (Formicidæ.)

Locality: Radoboj, Croatia. Horizon: Mayencian.

1867. Heer. Neue denkschr. schweiz. gesellsch., xxii, mem. 4: 29–30. *Pl.* 2, *figs.* 15, 15*b*.
1867. " Foss. hymen., 29–30. *Pl.* 2, *figs.* 15, 15*b*.

5944. **Attopsis nigra.** (Formicidæ.)

Locality: Radoboj, Croatia. Horizon: Mayencian.

1849. Heer. Insektenf. tertiärg. Oeningen, ii: 157–158. *Pl.* 12, *fig.* 13.
1852. Giebel. Deutschl. petref., 646.
1856. " Insect. d. vorwelt, 177–178.
1867. Heer. Neue denkschr. schweiz. gesellsch., xxii, mem. 4: 29, 42.
1867. " Foss. hymen., 29, 42.

See also Cataulacus niger.

5945. **Bassus** ———. (Ichneumonidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1834.	Keferstein.	Naturg. erdkörp., ii: 332 (as of Burmeister, but erroneously. Burmeister, Handb., i: 636, only says an Ichneumon like Bassus, etc.).

See also ——— ——— (Ichneumonidæ) Burm.

5946. **Bombus** ———. (Apidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1886.	Brischke.	Schrift. naturf. gesellsch. Danzig, n. f., vi, iii: 278.
1886.	"	Hym. bernst., 1.

5947. **Bombus** ———. (Apidæ.)

Locality: Florissant, Colo. Horizon: Oligocene.

1881.	Scudder.	Bull. U. S. geol. surv. terr., vi: 290.
1883.	"	Ann. rep. U. S. geol. surv. terr., xii: 280.

5948. **Bombus abavus.** (Apidæ.)

Locality: Oeningen, Baden. Horizon: Tortonian.

1867.	Heer.	Neue denkschr. schweiz. gesellsch., xxii, mem. 4: 5. *Pl.* 3, *figs.* 9, 10.
1867.	"	Foss. hymen., 5. *Pl.* 3, *figs.* 9, 10.

5949. **Bombus antiquus.** (Apidæ.)

Locality: Rott, Rhenish Prussia. Horizon: Aquitanian.

1859.	Heyden.	Palaeontogr., viii: 12. *Pl.* 2, *fig.* 4.

5950. **Bombus carbonarius.** (Apidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1856.	Menge.	Progr. petrischule Danzig, 1856: 27.

5951. **Bombus crassipes.** (Apidæ.)

Locality: Krottensee, Bohemia. Horizon: Aquitanian.

1877.	Novák.	Sitzungsb. k. akad. wiss. Wien, lxxvi: 92. *Pl.* 3, *fig.* 4.
1877.	"	Fauna egerer tertiärb., 22. *Pl.* 3, *fig.* 4.

5952. **Bombus grandævus.** (Apidæ.)

Localities: Radoboj, Croatia; Oeningen, Baden. Horizons: Mayencian, Tortonian.

1849.	Heer.	Insektenf. tertiärg. Oeningen, ii: 96–97. *Pl.* 7, *fig.* 3.
1852.	Giebel.	Deutschl. petref., 645.
1856.	"	Insect. d. vorwelt, 182–183.
1867.	Heer.	Neue denkschr. schweiz. gesellsch., xxii, mem. 4: 5. *Pl.* 3, *figs.* 6, 7.
1867.	"	Foss. hymen., 5. *Pl.* 3, *figs.* 6, 7.

5953. **Bombus jurinei** (Apidæ.)

Locality: Oeningen, Baden. Horizon: Tortonian.

1865.	Heer.	Urwelt der Schweiz, 386. *Fig.* 296.
1867.	"	Neue denkschr. schweiz. gesellsch., xxii, mem. 4: 4–5. *Pl.* 3, *fig.* 8.
1867.	"	Foss. hymen., 4–5. *Pl.* 3, *fig.* 8.
1872.	"	Monde prim. Suisse, 473. *Fig.* 296 on *p.* 474.
1876.	"	Prim. world Switz., ii: 43. *Fig.* 296 on *p.* 44.
1879.	"	Urwelt der Schweiz, 2ᵉ aufl., 411. *Fig.* 338 on *p.* 412.

5954. Bombus pusillus. (Apidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1856. Menge. Progr. petrischule Danzig, 1856: 27.

5955. Bombusoides mengei. (Apidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1856. Motschulsky. Étud. entom., v: 28.

5956. Brachygaster ——. (Evaniidæ.)

Compared with B. minor.

Locality: Prussian amber. Horizon: Ligurian.

1886. Brischke. Schrift. naturf. gesellsch. Danzig, n. f., vi, iii: 278.
1886. " Hym. bernst., 1.

5957. Bracon ——. (Braconidæ.)

Locality: Brunstatt, Alsatia. Horizon: Middle Oligocene.

1890. Foerster. In litt.

5958. Bracon ——. (Braconidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1835. Gravenhorst. Uebers. schles. gesellsch. vaterl. cult., 1834: 92.

5959. Bracon ——. (Braconidæ.)

Locality: Sicilian amber. Horizon: ——.

1838. Guérin. Rev. zool., 1838: 170.

5960. Bracon ——. (Braconidæ.)

Locality: Aix, France. Horizon: Ligurian.

1854. Pictet. Traité de paléont., 2e éd., ii: 382 (fide Serres MS.).

5961. Bracon ——. (Braconidæ.)

Locality: Similkameen River, British Columbia. Horizon: ——.

1879. Scudder. Rep. progr. geol. surv. Can., 1877–'78: B 177.
1879. " Ins. tert. Nicola, 2.
1890. " Tert. ins. N. A., 607. *Pl.* 3, *fig.* 33.

5962. Bracon laminarum. (Braconidæ.)

Locality: Green River, Wyo. Horizon: Oligocene.

1878. Scudder. Bull. U. S. geol. surv. terr., iv: 748.
1890. " Tert. ins. N. A., 606–607. *Pl.* 10, *fig.* 29.

5963. Bracon macrostigma. (Braconidæ.)

Locality: Sieblos, Rhenish Prussia. Horizon: Aquitanian.

1858. Heyden. Palaeontogr., v: 119. *Pl.* 23, *fig.* 18.

5964. Bradoponera meieri. (Formicidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1868. Mayr. Ameis. balt. bernst., 74–75. *Pl.* 4, *figs.* 70–71.

5965. Calyptites antediluvianus. (Braconidæ.)

Locality: Quesnel, British Columbia. Horizon: ———.

1877. Scudder. Rep. geol. surv. Can., 1875–'76: 270 (antediluvianum).
1877. " Ins. tert. Quesn., 5.
1877. " Rapp. opér. comm. géol. Can., 1875–'76: 299.
1885. " Zittel, Handb. palaeont., i, th. ii: 817. *Fig.* 1100.
1886. " Zittel-Barrois, Traité de paléont., ii: 819. *Fig.* 1117.
1890. " Tert. ins. N. A., 606. *Pl.* 3, *fig.* 32.

5966. Camponotus ——— (3 sp.). (Formicidæ.)

Locality: Brunstatt, Alsatia. Horizon: Middle Oligocene.

1890. Foerster. In litt.

5967. Camponotus ———. (Formicidæ.)

Locality: Gurnet Bay, Isle of Wight. Horizon: Bembridge Limestone.

1879. Woodward. Quart. journ. geol. soc. Lond., xxxv: 344.
1879. " Geol. mag., (n. s.), v: 89.

5968. Camponotus constrictus. (Formicidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1868. Mayr. Ameis. balt. bernst., 29–30. *Pl.* 1, *fig.* 11.

5969. Camponotus heraclea. (Formicidæ.)

Locality: Oeningen, Baden. Horizon: Tortonian.

1867. Mayr. Jahrb. k.-k. geol. reichsanst., xvii: 52.
1867. " Stud. Rad. form., 6.

See also Formica heraclea, etc.

5970. Camponotus igneus. (Formicidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1868. Mayr. Ameis. balt. bernst., 28–29. *Pl.* 1, *figs.* 9–10.

5971. Camponotus induratus. (Formicidæ.)

Compared with C. variegatus Sm.

Locality: Radoboj, Croatia. Horizon: Mayencian.

1867. Mayr. Jahrb. k.-k. geol. reichsanst., xvii: 52.
1867. " Stud. Rad. form., 6.

See also Formica indurata.

5972. Camponotus lignitum. (Formicidæ.)

Locality: Oeningen, Baden. Horizon: Tortonian.

1867. Mayr. Jahrb. k.-k. geol. reichsanst., xvii: 51–52.
1867. " Stud. Rad. form., 5–6.

See also Formica heraclea, etc.

5973. Camponotus mengei. (Formicidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1868. Mayr. Ameis. balt. bernst., 27–28. *Pl.* 1, *figs.* 1, 8.

5974. Camponotus pinguiculus radobojanus. (Formicidæ.)

Locality: Radoboj, Croatia. Horizon: Mayencian.

1867. Mayr. Jahrb. k.-k. geol. reichsanst., xvii: 52.
1867. " Stud. Rad. form., 6.
See also Formica pinguicula, etc.

5975. Camponotus pinguis radobojanus. (Formicidæ.)

Locality: Radoboj, Croatia. Horizon: Mayencian.

1867. Mayr. Jahrb. k.-k. geol. reichsanst., xvii: 51.
1867. " Stud. Rad. form., 5.
See also Formica pinguis, etc.

Camponotus radobojanus. See Camponotus pinguiculus radobojanus, Camponotus pinguis radobojanus.

5976. Camponotus vetus. (Formicidæ.)

Locality: White River, Colorado or Utah. Horizon: Oligocene.

1877. Scudder. Bull. U. S. geol. surv. terr., iii: 742.
1890. " Tert. ins. N. A., 619. *Pl.* 5, *figs.* 1, 2.
See also Formica ——— Scudder.

Campoplex ———. See Ophion (or Campoplex) ——— Sordelli.

5977. Cataulacus niger. (Formicidæ.)

Locality: Radoboj, Croatia. Horizon: Mayencian.

1867. Mayr. Jahrb. k.-k. geol. reichsanst., xvii: 58.
1867. " Stud. Rad. form., 12.
1867. Heer. Neue denkschr. schweiz. gesellsch., xxii, mem. 4: 42.
1867. " Foss. hymen., 42.
See also Attopsis nigra.

5978. Cemonus ———. (Crabronidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1886. Brischke. Schrift. naturf. gesellsch. Danzig, n. f., vi, iii: 278.
1886. " Hym. bernst., 1.

5979. Cephites fragilis. (Tenthredinidæ.)

Locality: Oeningen, Baden. Horizon: Tortonian.

1849. Heer. Insektenf. tertiärg. Oeningen, ii: 174–175. *Pl.* 14, *fig.* 1.
1852. Giebel. Deutschl. petref., 647.
1854. Pictet. Traité de paléont., 2e éd., ii: 381. *Pl.* 40, *fig.* 20.
1856. Giebel. Insect. d. vorwelt, 153.
1885. Scudder. Zittel, Handb. palaeont., i, th. ii: 816. *Fig.* 1096.
1886. " Zittel-Barrois, Traité de paléont., ii: 818. *Fig.* 1113.

5980. Cephites oeningensis. (Tenthredinidæ.)

Locality: Oeningen, Baden. Horizon: Tortonian.

1849. Heer. Insektenf. tertiärg. Oeningen, ii: 173–174. *Pl.* 13, *fig.* 17.
1852. Giebel. Deutschl. petref., 647.
1856. " Insect. d. vorwelt, 152.

5981. Cephus ———. (Tenthredinidæ.)

Locality: Prussian amber. Horizon: Ligurian.
1856. Menge. Progr. petrischule Danzig, 1856: 24.

5982. Ceraphron ———. (Proctotrupidæ.)

Locality: Prussian amber. Horizon: Ligurian.
1831. Burmeister. Oken, Isis, 1831: 1100.

5983. Cerceris ? ———. (Crabronidæ.)

Locality: Prussian amber. Horizon: Ligurian.
1886. Brischke. Schrift. naturf. gesellsch. Danzig, n. f., vi, iii: 278.
1886. " Hym. bernst., 1.

5984. Chalcites debilis. (Chalcididæ.)

Locality: Aix, France. Horizon: Ligurian.
1856. Heer. Viert. naturf. gesellsch. Zürich, i: 29–30. *Pl.* 2, *fig.* 16.
1885. Scudder. Zittel, Handb. palaeont., i, th. ii: 816. *Fig.* 1098.
1886. " Zittel-Barrois, Traité de paléont., ii: 818. *Fig.* 1115.

5985. Chalicodoma ———. (Apidæ.)

Locality: Prussian amber. Horizon: Ligurian.
1886. Brischke. Schrift. naturf. gesellsch. Danzig, n. f., vi, iii: 278.
1886. " Hym. bernst., 1.

5986. Chelonus ———. (Braconidæ.)

Locality: Prussian amber. Horizon: Ligurian.
1886. Brischke. Schrift. naturf. gesellsch. Danzig, n. f., vi, iii: 279.

5987. Chelonus ———. (Braconidæ.)

Locality: Prussian amber. Horizon: Ligurian.
1835. Gravenhorst. Uebers. schles. gesellsch. vaterl. cult., 1834: 92.

5988. Chrysis ———. (Chrysididæ.)

Locality: Prussian amber. Horizon: Ligurian.
1886. Brischke. Schrift. naturf. gesellsch. Danzig, n. f., vi, iii: 278.
1886. " Hym. bernst., 1.

5989. Chrysis ———. (Chrysididæ.)

Locality: Brunstatt, Alsatia. Horizon: Middle Oligocene.
1890. Foerster. In litt.

5990. Chrysis ———. (Chrysididæ.)

Locality: Florissant, Colo. Horizon: Oligocene.
1881. Scudder. Bull. U. S. geol. surv. terr., vi: 291.
1883. " Ann. rep. U. S. geol. surv. terr., xii: 280.

5991. Chrysis cyanea. (Chrysididæ.)

Locality: Copal. Horizon: Recent.
1776. Bloch. Beschäft. berl. gesellsch. naturf. freunde, ii: 187–188.

5992. Chrysis viridicyanea. (Chrysididæ.)

Compared with C. distinctissima.

Locality: Prussian amber. Horizon: Ligurian.

1862. Giebel. Zeitschr. ges. naturw., xx: 319–320.

5993. Cimbex —— (larva). (Tenthredinidæ.)

Compared with C. variabilis.

Locality: Prussian amber. Horizon: Ligurian.

1856. Menge. Progr. petrischule Danzig, 1856: 24.

5994. Cleptes ——. (Chrysididæ.)

Locality: Prussian amber. Horizon: Ligurian.

1886. Brischke. Schrift. naturf. gesellsch. Danzig, n. f., vi, iii: 278.
1886. " Hym. bernst., 1.

5995. Cleptes steenstrupii. (Chrysididæ.)

Locality: Jutland. Horizon: (Pliocene?)

1836. Beck. Proc. geol. soc. Lond., ii: 219 (undescr.) (Cleptis stenstrupii).
1836. " Lond. Edinb. phil. mag., (3), viii: 555 (undescr.).

Cleptis stenstrupii. See Cleptes steenstrupii.

Crematogaster pusilla. See Myrmica pusilla.

5996. Crossocerus ——. (Crabronidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1886. Brischke. Schrift. naturf. gesellsch. Danzig, n. f., vi, iii: 278.
1886. " Hym. bernst., 1.

5997. Cryptus ——. (Ichneumonidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1886. Brischke. Schrift. naturf. gesellsch. Danzig, n. f., vi, iii: 278.
1886. " Hym. bernst., 1.

5998. Cryptus ——. (Ichneumonidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1835. Gravenhorst. Uebers. schles. gesellsch. vaterl. cult., 1834: 92.

5999. Cryptus ——. (Ichneumonidæ.)

Locality: Oeningen, Baden. Horizon: Tortonian.

1888. Schöberlin. Soc. entom., iii: 61.

6000. Cryptus ——. (Ichneumonidæ.)

Compared with C. rosæ.

Locality: Aix, France. Horizon: Ligurian.

1829. Serres. Géogn. terrains tert., 229.

6001. Cryptus antiquus. (Ichneumonidæ.)

Locality: Oeningen, Baden. Horizon: Tortonian.

1849. Heer. Insektenf. tertiärg. Oeningen, ii: 168–169. *Pl.* 13, *fig.* 13.
1852. Giebel. Deutschl. petref., 647.
1856. " Insect. d. vorwelt, 155.

6002. Cynips ? ———. (Cynipidæ.)

Locality: Salzhausen, Germany. Horizon: Miocene.

1865. Heyd.-Heyd. Palaeontogr., xiv: 35 (or Pteromalus?). (Holes in Juglans acuminata Br.).

See also Pteromalus ——— Heyden.

6003. Cynips ———. (Cynipidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1820. Schlotheim. Petrefactenk., 43.

6004. Cynips succinea. (Cynipidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1822. Presl. Del. prag., i: 195.

6005. Dasypoda (vic.) ———. (Andrenidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1856. Menge. Progr. petrischule Danzig, 1856: 26.

6006. Decatoma antiqua. (Chalcididæ.)

Locality: Green River, Wyo. Horizon: Oligocene.

1878. Scudder. Bull. U. S. geol. surv. terr., iv: 749.

1890. " Tert. ins. N. A., 604–605. *Pl.* 10, *figs.* 20, 31.

6007. Didineis solidescens. (Sphegidæ.)

Compared with D. lunicornis (Fabr.).

Locality: Green River, Wyo. Horizon: Oligocene.

1890. Scudder. Tert. ins. N. A., 620. *Pl.* 10, *fig.* 30.

6008. Diplolepis ———. (Cynipidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1835. Gravenhorst. Uebers. schles. gesellsch. vaterl. cult., 1834: 92.

6009. Dolerus ———. (Tenthredinidæ.)

Locality: Brunstatt, Alsatia. Horizon: Middle Oligocene.

1890. Foerster. In litt.

6010. Dolerus ———. (Tenthredinidæ.)

Locality: Oeningen, Baden. Horizon: Tortonian.

1888. Schöberlin. Soc. entom., iii: 61.

6011. Eclytus lutatus. (Ichneumonidæ.)

Locality: Green River, Wyo. Horizon: Oligocene.

1890. Scudder. Tert. ins. N. A., 614. *Pl.* 10, *fig.* 24.

6012. Ectatomma europæum. (Formicidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1868. Mayr. Ameis. balt. bernst., 76–77. *Pl.* 4, *figs.* 72, 73.

6013. Emphytus ———. (Tenthredinidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1856. Menge. Progr. petrischule Danzig, 1856: 24.

6014. Enneamerus reticulatus. (Formicidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1868. Mayr. Ameis. balt. bernst., 100. *Pl.* 5, *figs.* 102, 103.

6015. Evania ——. (Evaniidæ.)

Compared with E. minuta Fabr.

Locality: Prussian amber. Horizon: Ligurian.

1831. Burmeister. Oken, Isis, 1831: 1100.
1832. " Handb. ent., i: 636.
1836. " Man. ent., 577.

6016. Formica ——. (Formicidæ.)

Locality: Thalheim (or Sotzka ?), Austria. Horizon: ——.

1855. Andrae. Foss. flora Siebenb., 26. *Pl.* 4, *figs.* 6*ab*, 8*b*.

6017. Formica ——. (Formicidæ.)

Locality: Copal. Horizon: Recent.

1776. Bloch. Beschäft. berl. gesellsch. naturf. freunde, ii: 183. *Pl.* 5, *fig.* 23.

6018. Formica ——. (Formicidæ.)

Locality: Copal. Horizon: Recent.

1776. Bloch. Beschäft. berl. gesellsch. naturf. freunde, ii: 188–189.

6019. Formica ——. (Formicidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1831. Burmeister. Oken, Isis, 1831: 1100.
1832. " Handb. ent., i: 636.
1836. " Man. ent., 577.

6020. Formica ——. (Formicidæ.)

Locality: Gabbro, Italy. Horizon: Tripoli earth.

1878. Capellini. Atti accad. linc., (3), mem. sc. fis., ii: 285.

6021. Formica ——. (Formicidæ.)

Locality: Aix, France. Horizon: Ligurian.

1829. Curtis. Edinb. new phil. journ., vii: 295.
1829. " Murchison-Lyell, Tert. form. Aix, 11.

6022. Formica —— (several). (Formicidæ.)

Locality: Brunstatt, Alsatia. Horizon: Middle Oligocene.

1888. Foerster. Mitth. comm. geol. Elsass-Lothr., i: 164.
1889. " Mitth. comm. geol. Elsass-Lothr., ii: 103.

6023. Formica ——. (Formicidæ.)

Locality: Sicilian amber. Horizon: ——.

1838. Guérin. Rev. zool., 1838: 170. *Pl.* 1, *fig.* 9.
See also Pseudomyrme —— Scudder, etc.

6024. Formica ——. (Formicidæ.)

Locality: Sicilian amber. Horizon: ——.

1838. Guérin. Rev. zool., 1838: 170. *Pl.* 1, *fig.* 10.
See also Pseudomyrme —— Scudder, etc.

6025. Formica ———. (Formicidæ.)

Locality: Sicilian amber. Horizon: ———.

1838. Guérin. Rev. zool., 1838: 170. *Pl.* 1, *fig.* 11.

6026. Formica ———. (Formicidæ.)

Locality: Sicilian amber. Horizon: ———.

1838. Guérin. Rev. zool., 1838: 170. *Pl.* 1, *fig.* 12.

6027. Formica ———. (Formicidæ.)

Locality: Rott, Rhenish Prussia. Horizon: Aquitanian.

1859. Heyden. Palaeontogr., viii: 12. *Pl.* 2, *fig.* 11.

6028. Formica ———. (Formicidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1856. Menge. Progr. petrischule Danzig, 1856: 25.

6029. Formica ———. (Formicidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1820. Schlotheim. Petrefactenk., 43.

6030. Formica ———. (Formicidæ.)

Locality: Green River, Wyo. Horizon: Oligocene.

1867. Scudder. Proc. Bost. soc. nat. hist., xi: 117.
See also Camponotus vetus.

6031. Formica ———. (Formicidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1742. Sendel. Hist. succ., 126–127. *Pl.* 4, *figs.* 18–21.
1825. Guérin. Dict. class. d'hist. nat., viii: 580 (fourmi).
1829. Serres. Géogn. terrains tert., 242.

6032. Formica ———. (Formicidæ.)

Compared with F. subterranea.

Locality: Aix, France. Horizon: Ligurian.

1829. Serres. Géogn. terrains tert., 230.

6033. Formica ———. (Formicidæ.)

Locality: Gurnet Bay, Isle of Wight. Horizon: Bembridge Limestone.

1879. Woodward. Quart. journ. geol. soc. Lond., xxxv: 344.
1879. " Geol. mag., n. s., v: 89.

6034. Formica acuminata. (Formicidæ.)

Locality: Radoboj, Croatia. Horizon: Mayencian.

1849. Heer. Insektenf. tertiärg. Oeningen, ii: 142. *Pl.* 11, *figs.* 13, 14*g*.
1852. Giebel. Deutschl. petref., 646.
1856. " Insect. d. vorwelt, 172.
1867. Heer. Neue denkschr. schweiz. gesellsch., xxii, mem. 4: 17. *Pl.* 1, *fig.* 17*b*.
1867. " Foss. hymen., 17. *Pl.* 1, *fig.* 17*b*.
1867. Mayr. Jahrb. k.-k. geol. reichsanst., xvii: 56.
1867. " Stud. Rad. form., 10.

6035. Formica æmula. (Formicidæ.)

Locality: Radoboj, Croatia. Horizon: Mayencian.

1867.	Heer.	Neue denkschr. schweiz. gesellsch., xxii, mem. 4: 18. *Pl.* 1, *figs.* 19, 19*b*.
1867.	"	Foss. hymen., 18. *Pl.* 1, *figs.* 19, 19*b*.
1867.	Mayr.	Jahrb. k.-k. geol. reichsanst., xvii: 56.
1867.	"	Stud. Rad. form., 10.

6036. Formica arcana. (Formicidæ.)

Locality: Quesnel, British Columbia. Horizon: ———.

1877.	Scudder.	Rep. geol. surv. Can., 1875–'76: 266–267.
1877.	"	Ins. tert. Quesn., 1–2.
1877.	"	Rapp. opér. comm. géol. Can., 1875–'76: 294–295.
1890.	"	Tert. ins. N. A., 618. *Pl.* 3, *fig.* 24.

6037. Formica atavina. (Formicidæ.)

Locality: Radoboj, Croatia. Horizon: Mayencian.

1849.	Heer.	Insektenf. tertiärg. Oeningen, ii: 143–144. *Pl.* 11, *fig.* 10.
1852.	Giebel.	Deutschl. petref., 646 (attavina).
1856.	"	Insect. d. vorwelt, 172–173.
1867.	Heer.	Neue denkschr. schweiz. gesellsch., xxii, mem. 4: 18.
1867.	"	Foss. hymen., 18.
1867.	Mayr.	Jahrb. k.-k. geol. reichsanst., xvii: 56.
1867.	"	Stud. Rad. form., 10.

Formica attavina. See **Formica atavina.**

6038. Formica buphthalma. (Formicidæ.)

Locality: Krottensee, Bohemia. Horizon: Aquitanian.

1877.	Novák.	Sitzungsb. k. akad. wiss. Wien, lxxvi: 91–92. *Pl.* 3, *fig.* 2.
1877.	"	Fauna egerer tertiärb., 21–22. *Pl.* 3, *fig.* 2.

6039. Formica capito. (Formicidæ.)

Localities: Aix, France; Radoboj, Croatia. Horizons: Ligurian, Mayencian.

1856.	Heer.	Viert. naturf. gesellsch. Zürich, i: 29.
1867.	"	Neue denkschr. schweiz. gesellsch., xxii, mem. 4: 14–15. *Pl.* 1, *figs.* 13, 13*b*.
1867.	"	Foss. hymen., 14–15. *Pl.* 1, *figs.* 13, 13*b*.

6040. Formica cephalica. (Formicidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1831.	Burmeister.	Oken, Isis, 1831: 1100.

6041. Formica cordata. (Formicidæ.)

Locality: Copal. Horizon: Recent.

1819.	Schweigger.	Beobacht. naturh. reisen, 119. *Pl.* 8, *figs.* 70, 70*a*, *b*.
1829.	Holl.	Handb. d. petref., 140.
1856.	Giebel.	Insect. d. vorwelt, 173.

6042. **Formica demersa.** (Formicidæ.)

Locality: Oeningen, Baden. Horizon: Tortonian.

1849. Heer. Insektenf. tertiärg. Oeningen, ii: 140–141. *Pl.* 11, *fig.* 7.
1852. Giebel. Deutschl. petref., 646.
1856. " Insect. d. vorwelt, 171.
1867. Heer. Neue denkschr. schweiz. gesellsch., xxii, mem. 4: 16. *Pl.* 1, *fig.* 16.
1867. " Foss. hymen., 16. *Pl.* 1, *fig.* 16.

6043. **Formica flori.** (Formicidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1868. Mayr. Ameis. balt. bernst., 48–50. *Pl.* 2, *figs.* 35–37.

6044. **Formica fragilis.** (Formicidæ.)

Compared with F. longicornis Latr., Africa.

Locality: Radoboj, Croatia. Horizon: Mayencian.

1867. Heer. Neue denkschr. schweiz. gesellsch., xxii, mem. 4: 8–9. *Pl.* 1, *figs.* 4, 4*b*, 5*ab*.
1867. " Foss. hymen., 8–9. *Pl.* 1, *figs.* 4, 4*b*, 5*ab*.
See also Lasius fragilis.

6045. **Formica freyeri.** (Formicidæ.)

Locality: Radoboj, Croatia. Horizon: Mayencian.

1867. Heer. Neue denkschr. schweiz. gesellsch., xxii, mem. 4: 10–11. *Pl.* 1, *fig.* 9.
1867. " Foss. hymen., 10–11. *Pl.* 1, *fig.* 9.
See also Lonchomyrmex freyeri.

6046. **Formica gibbosa.** (Formicidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1822. Presl. Del. prag., i: 197–198.

6047. **Formica globiventris.** (Formicidæ.)

Locality: Oeningen, Baden. Horizon: Tortonian.

1849. Heer. Insektenf. tertiärg. Oeningen, ii: 131–132. *Pl.* 9, *fig.* 13.
1852. Giebel. Deutschl. petref., 646.
1856. " Insect. d. vorwelt, 169.

6048. **Formica globularis.** (Formicidæ.)

Localities: Radoboj, Croatia; Gabbro, Italy. Horizon: Mayencian.

1849. Heer. Insektenf. tertiärg. Oeningen, ii: 131. *Pl.* 10, *fig.* 3.
1852. Giebel. Deutschl. petref., 645.
1856. " Insect. d. vorwelt, 168.
1867. Heer. Neue denkschr. schweiz. gesellsch., xxii, mem. 4: 14.
1867. " Foss. hymen., 14.
1878. Capellini. Atti accad. linc., (3), mem. sc. fis., ii: 285.
See also Lasius globularis, Liometopum antiquum.

6049. **Formica gracilis.** (Formicidæ.)

Locality: Radoboj, Croatia. Horizon: Mayencian.

1867. Heer. Neue denkschr. schweiz. gesellsch., xxii, mem. 4: 7–8. *Pl.* 1, *fig.* 3*ab*.
1867. " Foss. hymen., 7–8. *Pl.* 1, *fig.* 3*ab*.

6050. Formica gravida. (Formicidæ.)

Locality: Oeningen, Baden. Horizon: Tortonian.

1849. Heer. Insektenf. tertiärg. Oeningen, ii: 114–115. *Pl.* 9, *fig.* 1.
1852. Giebel. Deutschl. petref., 645.
1856. " Insect. d. vorwelt, 163.

6051. Formica heraclea. (Formicidæ.)

Locality: Oeningen, Baden. Horizon: Tortonian.

1849. Heer. Insektenf. tertiärg. Oeningen, ii: 116–118. *Pl.* 11, *fig.* 3.
1852. Giebel. Deutschl. petref., 645.
1856. " Insect. d. vorwelt, 164.
1865. Heer. Urwelt der Schweiz, 386, expl. fig. 292 (=F. lignitum).
1867. " Neue denkschr. schweiz. gesellsch., xxii, mem. 4: 9–10. *Pl.* 1, *fig.* 7.
1867. " Foss. hymen., 9–10 (see note about pl. 11, fig. 15*c*). *Pl.* 1, *fig.* 7.

See also Formica lignitum, Camponotus heraclea, Camponotus lignitum.

6052. Formica imhoffii. (Formicidæ.)

Locality: Radoboj, Croatia. Horizon: Mayencian.

1849. Heer. Insektenf. tertiärg. Oeningen, ii: 138. *Pl.* 10, *fig.* 10.
1852. Giebel. Deutschl. petref., 646.
1856. " Insect. d. vorwelt, 170–171.

See also Liometopum imhoffii, etc.

6053. Formica immersa. (Formicidæ.)

Locality: Oeningen, Baden. Horizon: Tortonian.

1849. Heer. Insektenf. tertiärg. Oeningen, ii: 122–123. *Pl.* 9, *fig.* 5.
1852. Giebel. Deutschl. petref., 645.
1856. " Insect. d. vorwelt, 166.

6054. Formica indurata. (Formicidæ.)

Locality: Radoboj, Croatia. Horizon: Mayencian.

1849. Heer. Insektenf. tertiärg. Oeningen, ii: 116. *Pl.* 11, *fig.* 2.
1852. Giebel. Deutschl. petref., 645.
1856. " Insect. d. vorwelt, 164.
1867. Heer. Neue denkschr. schweiz. gesellsch., xxii, mem. 4: 9. *Pl.* 1, *figs.* 6*ab*.
1867. " Foss. hymen., 9. *Pl.* 1, *figs.* 6*ab*.

See also Camponotus induratus.

6055. Formica kollari. (Formicidæ.)

Locality: Radoboj, Croatia. Horizon: Mayencian.

1867. Heer. Neue denkschr. schweiz. gesellsch., xxii, mem. 4: 15. *Pl.* 1, *figs.* 14, 14*b*.
1867. " Foss. hymen., 15. *Pl.* 1, *figs.* 14, 14*b*.

6056. Formica lavateri. (Formicidæ.)

Locality: Oeningen, Baden. Horizon: Tortonian.

1849. Heer. Insektenf. tertiärg. Oeningen, ii: 127. *Pl* 9, *fig.* 11.
1852. Giebel. Deutschl. petref., 645.
1856. " Insect. d. vorwelt, 167.

1867. Heer. Neue denkschr. schweiz. gesellsch., xxii, mem. 4: 11. *Pl.* 1, *fig.* 10*a*.
1867. " Foss. hymen., 11. *Pl.* 1, *fig.* 10*a*.
1867. Mayr. Jahrb. k.-k. geol. reichsanst., xvii: 53.
1867. " Stud. Rad. form., 7.

See also Formica lavateri major, F. obtecta.

6057. Formica lavateri major. (Formicidæ.)

Locality: Radoboj, Croatia. Horizon: Mayencian.

1867. Heer. Neue denkschr. schweiz. gesellsch., xxii, mem. 4: 11. *Pl.* 1, *fig.* 10*b*.
1867. " Foss. hymen., 11. *Pl.* 1, *fig.* 10*b*.

See also Formica lavateri, etc.

6058. Formica lignitum. (Formicidæ.)

Compared with F. herculeana L.

Localities: Oeningen, Baden; vicinity Bonn, Rhenish Prussia. Horizons: Tortonian, Aquitanian?

1837. Germar. Fauna insect. Europæ, xix: 19. *Pl.* 19.
1849. Heer. Insektenf. tertiärg. Oeningen, ii: 112–114. *Pl.* 8, *fig.* 6.
1852. Giebel. Deutschl. petref., 645.
1856. " Insect. d. vorwelt, 163.
1865. Lyell. Elem geol., 6th ed., 250. *Fig.* 181c on *p.* 249.
1865. Heer. Urwelt der Schweiz, 360, 387, 470. *Figs.* 292*a–c* on *p.* 386.
1867. " Neue denkschr. schweiz. gesellsch., xxii, mem. 4: 7. *Pl.* 1, *figs.* 2*ab*.
1867. " Foss. hymen., 7. *Pl.* 1, *figs.* 2*ab*.
1872. " Monde prim. Suisse, 442, 475, 573. *Figs.* 292*a–c* on *p.* 474.
1876. " Prim. world Switz., ii: 14, 45, 131. *Figs.* 292*a–b* on *p.* 44.
1879. " Urwelt der Schweiz, 2^{e} aufl., 386, 413, 497. *Fig.* 334 on *p.* 412.

See also Formica heraclea, etc.

6059. Formica longæva. (Formicidæ.)

Locality: Radoboj, Croatia. Horizon: Mayencian.

1849. Heer. Insektenf. tertiärg. Oeningen, ii: 132. *Pl.* 10, *fig.* 4.
1852. Giebel. Deutschl. petref., 645.
1856. " Insect. d. vorwelt, 169.
1867. Heer. Neue denkschr. schweiz. gesellsch., xxii, mem. 4: 14.
1867. " Foss. hymen., 14.

See also Lasius longævus.

6060. Formica longicollis. (Formicidæ.)

Locality: Oeningen, Baden. Horizon: Tortonian.

1849. Heer. Insektenf. tertiärg. Oeningen, ii: 115–116. *Pl.* 11, *fig.* 1.
1852. Giebel. Deutschl. petref., 645.
1856. " Insect. d. vorwelt, 164.

6061. Formica longipennis. (Formicidæ.)

Locality: Radoboj, Croatia. Horizon: Mayencian.

1849. Heer. Insektenf. tertiärg. Oeningen, ii: 136. *Pl.* 10, *fig.* 7.
1852. Giebel. Deutschl. petref., 646.
1856. " Insect. d. vorwelt, 170.
1867. Mayr. Jahrb. k.-k. geol. reichsanst., xvii: 55.
1867. " Stud. Rad. form., 9.

6062. Formica longiventris. (Formicidæ.)

Locality: Radoboj, Croatia. Horizon: Mayencian.

1849. Heer. Insektenf. tertiärg. Oeningen, ii: 123. *Pl.* 9, *fig.* 6.
1852. Giebel. Deutschl. petref., 645.
1856. " Insect. d. vorwelt, 166.

6063. Formica lucida. (Formicidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1856. Giebel. Insect. d. vorwelt, 163–164.

6064. Formica luteola. (Formicidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1822. Presl. Del. prag., i: 197.

6065. Formica macrocephala. (Formicidæ.)

Localities: Oeningen, Baden; Radoboj, Croatia. Horizons: Tortonian, Mayencian.

1849. Heer. Insektenf. tertiärg. Oeningen, ii: 125–127. *Pl.* 9, *fig.* 10.
1852. Giebel. Deutschl. petref., 645.
1856. " Insect. d. vorwelt, 167.
1867. Heer. Neue denkschr. schweiz. gesellsch., xxii, mem. 4: 12–13. *Pl.* 1, *fig.* 11.
1867. " Foss. hymen., 12–13. *Pl.* 1, *fig.* 11.
1867. Mayr. Jahrb. k.-k. geol. reichsanst., xvii: 53.
1867. " Stud. Rad. form., 7.

See also Formica macrocephala oeningensis, F. macrocephala radobojana.

6066. Formica macrocephala oeningensis. (Formicidæ.)

Locality: Oeningen, Baden. Horizon: Tortonian.

1849. Heer. Insektenf. tertiärg. Oeningen, ii: 126. *Pl.* 9, *fig.* 10*a*.

See also Formica macrocephala, etc.

6067. Formica macrocephala radobojana. (Formicidæ.)

Locality: Radoboj, Croatia. Horizon: Mayencian.

1849. Heer. Insektenf. tertiärg. Oeningen., ii: 126–127. *Pl.* 9, *fig.* 10*ab*.

See also Formica macrocephala, etc.

6068. Formica macrognatha. (Formicidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1822. Presl. Del. prag., i: 198–199.

6069. Formica macrophthalma. (Formicidæ.)

Localities: Oeningen, Baden; Sinigallia, Italy. Horizons: Tortonian, Helvetian.

1849. Heer. Insektenf. tertiärg. Oeningen., ii: 124–125. *Pl.* 9, *fig.* 8.
1852. Giebel. Deutschl. petref., 645.
1856. " Insect. d. vorwelt, 166.
1859. Scarabelli. Mass.-Scarab., Flora foss. Senig., 25.

Formica major. See Formica lavateri major.

6070. Formica minutula. (Formicidæ.)

Localities: Radoboj, Croatia; Aix, France. Horizons: Mayencian, Ligurian.

1849. Heer. Insektenf. tertiärg. Oeningen, ii: 136. *Pl.* 10, *fig.* 8.
1852. Giebel. Deutschl. petref., 646.

1856. Giebel. Insect. d. vorwelt, 170.
1856. Heer. Viert. naturf. gesellsch. Zürich, i: 28. *Pl.* 2, *fig.* 2*b*.
1867. " Neue denkschr. schweiz. gesellsch., xxii, mem. 4: 16. *Pl.* 1, *fig.* 15.
1867. " Foss. hymen., 16. *Pl.* 1, *fig.* 15.

See also **Lasius minutulus.**

6071. Formica nigra. (Formicidæ.)

Localities: Copal (Bloch), Prussian amber (Presl). Horizons: Recent, Ligurian.

1776. Bloch. Beschäft. berl. gesellsch. naturf. freunde, ii: 168. *Pl.* 3, *fig.* 6.
1822. Presl. Del. prag., i: 196.

6072. Formica obesa. (Formicidæ.)

Localities: Oeningen, Baden; Radoboj, Croatia. Horizons: Tortonian, Mayencian.

1849. Heer. Insektenf. tertiärg. Oeningen, ii: 108–110. *Pl.* 8, *fig.* 1.
1852. Giebel. Deutschl. petref., 645.
1856. " Insect. d. vorwelt, 162.
1865. Heer. Urwelt der Schweiz, 360.
1872. " Monde prim. Suisse, 442.
1876. " Prim. world Switz., ii: 14.
1879. " Urwelt der Schweiz, 2ᵉ aufl., 386.

See also **Formica obesa radobojana, F. obesa œningensis, Œcophylla obesa radobojana, Myrmica pusilla.**

6073. Formica obesa œningensis. (Formicidæ.)

Locality: Oeningen, Baden. Horizon: Tortonian.

1849. Heer. Insektenf. tertiärg. Oeningen, ii: 110. *Pl.* 8, *figs.* 2*ab*.

See also **Formica obesa, etc.**

6074. Formica obesa radobojana. (Formicidæ.)

Locality: Radoboj, Croatia. Horizon: Mayencian.

1849. Heer. Insektenf. tertiärg. Oeningen, ii: 108–109. *Pl.* 8, *figs.* 1*a–e*.

See also **Formica obesa, etc.**

6075. Formica oblita. (Formicidæ.)

Locality: Radoboj, Croatia. Horizon: Mayencian.

1867. Heer. Neue denkschr. schweiz. gesellsch., xxiii, mem. 4: 12, 13–14. *Pl.* 1, *figs.* 12, 12*b*.
1867. " Foss. hymen., 12, 13–14. *Pl.* 1, *figs.* 12, 12*b*.
1867. Mayr. Jahrb. k.-k. geol. reichsanst., xvii: 56.
1867. " Stud. Rad. form., 10.

6076. Formica obliterata. (Formicidæ.)

Locality: Radoboj, Croatia. Horizon: Mayencian.

1849. Heer. Insektenf. tertiärg. Oeningen, ii: 144–145. *Pl.* 11, *figs.* 11*c*, 12.
1852. Giebel. Deutschl. petref., 646.
1856. " Insect. d. vorwelt, 173.
1867. Heer. Neue denkschr. schweiz. gesellsch., xxii, mem. 4: 18.
1867. " Foss. hymen., 18.

See also **Lasius obliteratus.**

6077. Formica obscura. (Formicidæ.)

Locality: Radoboj, Croatia. Horizon: Mayencian.

1849.	Heer.	Insektenf. tertiärg. Oeningen, ii: 119–120. *Pl.* 9, *fig.* 2.
1852.	Giebel.	Deutschl. petref., 645.
1856.	“	Insect. d. vorwelt, 165.

See also Lasius obscurus.

6078. Formica obtecta. (Formicidæ.)

Locality: Radoboj, Croatia. Horizon: Mayencian.

1849.	Heer.	Insektenf. tertiärg. Oeningen, ii: 123–124. *Pl.* 9, *fig.* 7.
1852.	Giebel.	Deutschl. petref., 645.
1856.	“	Insect. d. vorwelt, 166.
1867.	Heer.	Foss. hymen., 11 (=F. lavateri).

See also Formica lavateri, etc.

6079. Formica obvoluta. (Formicidæ.)

Locality: Radoboj, Croatia. Horizon: Mayencian.

1849.	Heer.	Insektenf. tertiärg. Oeningen, ii: 141–142. *Pl.* 10, *fig.* 9*f*.
1852.	Giebel.	Deutschl. petref., 646.
1856.	“	Insect. d. vorwelt, 172.
1867.	Heer.	Neue denkschr. schweiz. gesellsch., xxii, mem. 4: 16–17. *Pl.* 1, *fig.* 17*a*.
1867.	“	Foss. hymen., 16–17. *Pl.* 1, *fig.* 17*a*.
1867.	Mayr.	Jahrb. k.-k. geol. reichsanst., xvii: 56.
1867.	“	Stud. Rad. form., 10.

6080. Formica occultata. (Formicidæ.)

Locality: Radoboj, Croatia. Horizon: Mayencian.

1849.	Heer.	Insektenf. tertiärg. Oeningen, ii: 134–135. *Pl.* 10, *fig.* 6; *pl.* 11, *fig.* 11.
1852.	Giebel.	Deutschl. petref., 646.
1856.	“	Insect. d. vorwelt, 169–170.
1858.	Heer.	Bull. séances soc. vaud. sc. nat., v: 150.
1867.	“	Neue denkschr. schweiz. gesellsch., xxii, mem. 4: 15–16. *Pl.* 3, *fig.* 15*b*.
1867.	“	Foss. hymen., 15–16. *Pl.* 3, *fig.* 15*b*.

See also Formica occultata parschlugiana, Lasius occultatus, Hypoclinea haueri.

6081. Formica occultata parschlugiana. (Formicidæ.)

Locality: Parschlug, Styria. Horizon: Tortonian.

1849.	Heer.	Insektenf. tertiärg. Oeningen, ii: 135. *Pl.* 10, *fig.* 6*e*.

See also Formica occultata, etc.

6082. Formica ocella. (Formicidæ.)

Locality: Radoboj, Croatia. Horizon: Mayencian.

1849.	Heer.	Insektenf. tertiärg. Oeningen, ii: 133–134. *Pl.* 10, *fig.* 5; *pl.* 11, *fig.* 14.
1852.	Giebel.	Deutschl. petref., 646.
1856.	“	Insect. d. vorwelt, 169.
1867.	Mayr.	Jahrb. k.-k. geol. reichsanst., xvii: 54.
1867.	“	Stud. Rad. form., 8.

6083. **Formica oculata.** (Formicidæ.)

Localities: Radoboj, Croatia; Aix, France. Horizons: Mayencian, Ligurian.

1849. Heer. Insektenf. tertiärg. Oeningen, ii: 143. *Pl.* 10, *fig.* 9*d.*
1852. Giebel. Deutschl. petref., 646.
1856. " Insect. d. vorwelt, 172.
1856. Heer. Viert. naturf. gesellsch. Zürich, i: 28.
1867. " Neue denkschr. schweiz. gesellsch., xxii, mem. 4: 17–18. *Pl.* 1, *fig.* 18.
1867. " Foss. hymen., 17–18. *Pl.* 1, *fig.* 18.
1867. Mayr. Jahrb. k.-k. geol. reichsanst., xvii: 56.
1867. " Stud. Rad. form., 10.

Formica œningensis. See Formica macrocephala œningensis, Formica obesa œningensis, Formica pinguicula œningensis, Formica pinguis œningensis.

6084. **Formica opthalmica.** (Formicidæ.)

Locality: Radoboj, Croatia. Horizon: Mayencian.

1849. Heer. Insektenf. tertiärg. Oeningen, ii: 125. *Pl.* 9, *fig.* 9.
1852. Giebel. Deutschl. petref., 645.
1856. " Insect. d. vorwelt, 167.
1867. Heer. Neue denkschr. schweiz. gesellsch., xxii, mem. 4: 11–12.
1867. " Foss. hymen., 11–12.
1867. Mayr. Jahrb. k.-k. geol. reichsanst., xvii: 52–53.
1867. " Stud. Rad. form., 6–7.

6085. **Formica orbata.** (Formicidæ.)

Locality: Oeningen, Baden. Horizon: Tortonian.

1849. Heer. Insektenf. tertiärg. Oeningen, ii: 141. *Pl.* 11, *fig.* 8.
1852. Giebel. Deutschl. petref., 646.
1856. Giebel. Insect. d. vorwelt, 171.

Formica parschlugiana. See Formica occultata parschlugiana.

6086. **Formica parvula.** (Formicidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1822. Presl. Del. prag., i: 196–197.

6087. **Formica pinguicula.** (Formicidæ.)

Localities: Oeningen, Baden; Radoboj, Croatia. Horizons: Tortonian, Mayencian.

1849. Heer. Insektenf. tertiärg. Oeningen, ii: 118–119. *Pl.* 11, *figs.* 4, 9.
1852. Giebel. Deutschl. petref., 645.
1856. " Insect. d. vorwelt, 165.
1867. Heer. Neue denkschr. schweiz. gesellsch., xxii, mem. 4: 10. *Pl.* 1, *fig.* 8.
1867. " Foss. hymen., 10. *Pl.* 1, *fig.* 8.

See also Formica pinguicula œningensis, F. pinguicula radobojana, Camponotus pinguiculus radobojanus.

6088. **Formica pinguicula œningensis.** (Formicidæ.)

Locality: Oeningen, Baden. Horizon: Tortonian.

1849. Heer. Insektenf. tertiärg. Oeningen, ii: 118. *Pl.* 11, *fig.* 4.

See also Formica pinguicula, etc.

6089. Formica pinguicula radobojana. (Formicidæ.)

Locality: Radoboj, Croatia. Horizon: Mayencian.

1849. Heer. Insektenf. tertiärg. Oeningen, ii: 118–119. *Pl.* 9, *fig.* 9*b*.

See also Formica pinguicula, etc.

6090. Formica pinguis. (Formicidæ.)

Compared with F. herculeana.

Localities: Oeningen, Baden; Radoboj, Croatia. Horizons: Tortonian, Mayencian.

1849. Heer. Insektenf. tertiärg. Oeningen, ii: 110–111. *Pl.* 8, *figs.* 3, 4.
1852. Giebel. Deutschl. petref., 645.
1856. " Insect. d. vorwelt, 162.
1865. Heer. Urwelt der Schweiz, 470.
1872. " Monde prim. Suisse, 573.
1876. " Prim. world Switz., ii: 131.
1879. " Urwelt der Schweiz, 2e aufl., 497.

See also Formica pinguis radobojana, F. pinguis œningensis, Camponotus pinguis radobojanus.

6091. Formica pinguis œningensis. (Formicidæ.)

Locality: Oeningen, Baden. Horizon: Tortonian.

1849. Heer. Insektenf. tertiärg. Oeningen, ii: 111. *Pl.* 8, *fig.* 4*ab*.

See also Formica pinguis, etc.

6092. Formica pinguis radobojana. (Formicidæ.)

Locality: Radoboj, Croatia. Horizon: Mayencian.

1849. Heer. Insektenf. tertiärg. Oeningen, ii: 110–111. *Pl.* 8, *fig.* 3.

See also Formica pinguis, etc.

6093. Formica primitiva. (Formicidæ.)

Locality: Oeningen, Baden. Horizon: Tortonian.

1849. Heer. Insektenf. tertiärg. Oeningen, ii: 139–140. *Pl.* 11, *fig.* 6.
1852. Giebel. Deutschl. petref., 646.
1856. " Insect. d. vorwelt, 171.
1867. Heer. Neue denkschr. schweiz. gesellsch., xxii, mem. 4: 16.
1867. " Foss. hymen., 16.

6094. Formica primordialis. (Formicidæ.)

Locality: Oeningen, Baden. Horizon: Tortonian.

1849. Heer. Insektenf. tertiärg. Oeningen, ii: 120–121. *Pl.* 9, *figs.* 3, 4.
1852. Giebel. Deutschl. petref., 645.
1854. Pictet. Traité de paléont., 2e éd., ii: 383. *Pl.* 40, *fig.* 18.
1856. Giebel. Insect. d. vorwelt, 165.

6095. Formica procera. (Formicidæ.)

Locality: Oeningen, Baden. Horizon: Tortonian.

1849. Heer. Insektenf. tertiärg. Oeningen, ii: 111–112. *Pl.* 8, *figs.* 5*a–c*.
1852. Giebel. Deutschl. petref., 645.
1856. " Insect. d. vorwelt, 163.
1865. Heer. Urwelt der Schweiz, 360.
1867. " Neue denkschr. schweiz. gesellsch., xxii, mem. 4: 6–7. *Pl.* 1, *figs.* 1*ab*.

6083. Formica oculata. (Formicidæ.)

Localities: Radoboj, Croatia; Aix, France. Horizons: Mayencian, Ligurian.

1849.	Heer.	Insektenf. tertiärg. Oeningen, ii: 143. *Pl.* 10, *fig.* 9*d*.
1852.	Giebel.	Deutschl. petref., 646.
1856.	"	Insect. d. vorwelt, 172.
1856.	Heer.	Viert. naturf. gesellsch. Zürich, i: 28.
1867.	"	Neue denkschr. schweiz. gesellsch., xxii, mem. 4: 17–18. *Pl.* 1, *fig.* 18.
1867.	"	Foss. hymen., 17–18. *Pl.* 1, *fig.* 18.
1867.	Mayr.	Jahrb. k.-k. geol. reichsanst., xvii: 56.
1867.	"	Stud. Rad. form., 10.

Formica œningensis. See Formica macrocephala œningensis, Formica obesa œningensis, Formica pinguicula œningensis, Formica pinguis œningensis.

6084. Formica opthalmica. (Formicidæ.)

Locality: Radoboj, Croatia. Horizon: Mayencian.

1849.	Heer.	Insektenf. tertiärg. Oeningen, ii: 125. *Pl.* 9, *fig.* 9.
1852.	Giebel.	Deutschl. petref., 645.
1856.	"	Insect. d. vorwelt, 167.
1867.	Heer.	Neue denkschr. schweiz. gesellsch., xxii, mem. 4: 11–12.
1867.	"	Foss. hymen., 11–12.
1867.	Mayr.	Jahrb. k.-k. geol. reichsanst., xvii: 52–53.
1867.	"	Stud. Rad. form., 6–7.

6085. Formica orbata. (Formicidæ.)

Locality: Oeningen, Baden. Horizon: Tortonian.

1849.	Heer.	Insektenf. tertiärg. Oeningen, ii: 141. *Pl.* 11, *fig.* 8.
1852.	Giebel.	Deutschl. petref., 646.
1856.	Giebel.	Insect. d. vorwelt, 171.

Formica parschlugiana. See Formica occultata parschlugiana.

6086. Formica parvula. (Formicidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1822.	Presl.	Del. prag., i: 196–197.

6087. Formica pinguicula. (Formicidæ.)

Localities: Oeningen, Baden; Radoboj, Croatia. Horizons: Tortonian, Mayencian.

1849.	Heer.	Insektenf. tertiärg. Oeningen, ii: 118–119. *Pl.* 11, *figs.* 4, 9.
1852.	Giebel.	Deutschl. petref., 645.
1856.	"	Insect. d. vorwelt, 165.
1867.	Heer.	Neue denkschr. schweiz. gesellsch., xxii, mem. 4: 10. *Pl.* 1, *fig.* 8.
1867.	"	Foss. hymen., 10. *Pl.* 1, *fig.* 8.

See also Formica pinguicula œningensis, F. pinguicula **radobojana**, **Camponotus pinguiculus radobojanus.**

6088. Formica pinguicula œningensis. (Formicidæ.)

Locality: Oeningen, Baden. Horizon: Tortonian.

1849.	Heer.	Insektenf. tertiärg. Oeningen, ii: 118. *Pl.* 11, *fig.* 4.

See also Formica pinguicula, etc.

6089. Formica pinguicula radobojana. (Formicidæ.)

Locality: Radoboj, Croatia. Horizon: Mayencian.

1849.	Heer.	Insektenf. tertiärg. Oeningen, ii: 118–119. *Pl.* 9, *fig.* 9*b*.

See also Formica pinguicula, etc.

6090. Formica pinguis. (Formicidæ.)

Compared with F. herculeana.

Localities: Oeningen, Baden; Radoboj, Croatia. Horizons: Tortonian, Mayencian

1849.	Heer.	Insektenf. tertiärg. Oeningen, ii: 110–111. *Pl.* 8, *figs.* 3, 4.
1852.	Giebel.	Deutschl. petref., 645.
1856.	"	Insect. d. vorwelt, 162.
1865.	Heer.	Urwelt der Schweiz, 470.
1872.	"	Monde prim. Suisse, 573.
1876.	"	Prim. world Switz., ii: 131.
1879.	"	Urwelt der Schweiz, 2ᵉ aufl., 497.

See also Formica pinguis radobojana, F. pinguis œningensis, Camponotus pinguis radobojanus.

6091. Formica pinguis œningensis. (Formicidæ.)

Locality: Oeningen, Baden. Horizon: Tortonian.

1849.	Heer.	Insektenf. tertiärg. Oeningen, ii: 111. *Pl.* 8, *fig.* 4*ab*.

See also Formica pinguis, etc.

6092. Formica pinguis radobojana. (Formicidæ.)

Locality: Radoboj, Croatia. Horizon: Mayencian.

1849.	Heer.	Insektenf. tertiärg. Oeningen, ii: 110–111. *Pl.* 8, *fig.* 3.

See also Formica pinguis, etc.

6093. Formica primitiva. (Formicidæ.)

Locality: Oeningen, Baden. Horizon: Tortonian.

1849.	Heer.	Insektenf. tertiärg. Oeningen, ii: 139–140. *Pl.* 11, *fig.* 6.
1852.	Giebel.	Deutschl. petref., 646.
1856.	"	Insect. d. vorwelt, 171.
1867.	Heer.	Neue denkschr. schweiz. gesellsch., xxii, mem. 4: 16.
1867.	"	Foss. hymen., 16.

6094. Formica primordialis. (Formicidæ.)

Locality: Oeningen, Baden. Horizon: Tortonian.

1849.	Heer.	Insektenf. tertiärg. Oeningen, ii: 120–121. *Pl.* 9, *figs.* 3, 4.
1852.	Giebel.	Deutschl. petref., 645.
1854.	Pictet.	Traité de paléont., 2ᵉ éd., ii: 383. *Pl.* 40, *fig.* 18.
1856.	Giebel.	Insect. d. vorwelt, 165.

6095. Formica procera. (Formicidæ.)

Locality: Oeningen, Baden. Horizon: Tortonian.

1849.	Heer.	Insektenf. tertiärg. Oeningen, ii: 111–112. *Pl.* 8, *figs.* 5*a–c*.
1852.	Giebel.	Deutschl. petref., 645.
1856.	"	Insect. d. vorwelt, 163.
1865.	Heer.	Urwelt der Schweiz, 360.
1867.	"	Neue denkschr. schweiz. gesellsch., xxii, mem. 4: 6–7. *Pl.* 1, *figs.* 1*ab*.

1867. Heer. Foss. hymen., 6, 7. *Pl.* 1, *figs.* 1*ab*.
1872. " Monde prim. Suisse, 442.
1876. " Prim. world Switz., ii: 14.
1879. " Urwelt der Schweiz, 2^{e} aufl., 386.

6096. Formica pulchella. (Formicidæ.)

Locality: Oeningen, Baden. Horizon: Tortonian.

1849. Heer. Insektenf. tertiärg. Oeningen, ii: 142–143. *Pl.* 11, *fig.* 9.
1852. Giebel. Deutschl. petref., 646.
1856. " Insect. d. vorwelt, 172.
1867. Heer. Neue denkschr. schweiz. gesellsch., xxii, mem. 4: 17.
1867. " Foss. hymen., 17.

6097. Formica pumila. (Formicidæ.)

Locality: Radoboj, Croatia. Horizon: Mayencian.

1849. Heer. Insektenf. tertiärg. Oeningen, ii: 137. *Pl.* 11, *fig.* 15.
1852. Giebel. Deutschl. petref., 646.
1856. " Insect. d. vorwelt, 170.
1867. Heer. Neue denkschr. schweiz. gesellsch., xxii, mem. 4: 16.
1867. " Foss. hymen., 16.
1867. Mayr. Jahrb. k.-k. geol. reichsanst., xvii: 55.
1867. " Stud. Rad. form., 9.

6098. Formica quadrata. (Formicidæ.)

Locality: Prussian amber (Holl), Copal (Giebel). Horizon: Ligurian, recent.

1829. Holl. Handb. d. petref., 140.
1856. Giebel. Insect. d. vorwelt, 173.

Formica radobojana. See Formica macrocephala radobojana, Formica obesa radobojana, Formica pinguicula radobojana, Formica pinguis radobojana.

6099. Formica redtenbacheri. (Formicidæ.)

Locality: Radoboj, Croatia. Horizon: Mayencian.

1849. Heer. Insektenf. tertiärg. Oeningen, ii: 129–131. *Pl.* 10, *fig.* 2.
1852. Giebel. Deutschl. petref., 645.
1856. " Insect. d. vorwelt, 168.
1867. Heer. Neue denkschr. schweiz. gesellsch., xxii, mem. 4: 12, 13.
1867. " Foss. hymen., 12, 13.
See also Lasius redtenbacheri.

6100. Formica rufa (recent). (Formicidæ.)

Locality: Prussian amber. Horizon: Ligurian.

[1758. Linné. Syst. nat., ed. x., i: 580.]
1831. Burmeister. Oken, Isis, 1831: 1100.

6101. Formica saccharivora. (Formicidæ.)

Locality: Copal. Horizon: Recent.

1776. Bloch. Beschäft. berl. gesellsch. naturf. freunde, ii: 178–179. *Pl.* 5, *fig.* 20.

6102. Formica salomonis. (Formicidæ.)

Locality: Copal. Horizon: Recent.

1776. Bloch. Beschäft. berl. gesellsch. naturf. freunde, ii: 172 178. *Pl.* 4, *fig.* 11; *pl.* 5, *fig.* 20.

6103. **Formica schmidtii.** (Formicidæ.)

Locality: Radoboj, Croatia. Horizon: Mayencian.

1849. Heer. Insektenf. tertiärg. Oeningen, ii: 138–139. *Pl.* 11, *fig.* 5.
1852. Giebel. Deutschl. petref., 646.
1856. " Insect. d. vorwelt, 171.

See also Liometopum imhoffii, etc.

6104. **Formica seuberti.** (Formicidæ.)

Localities: Oeningen, Baden; Tallyá, Hungary. Horizon: Tortonian.

1849. Heer. Insektenf. tertiärg. Oeningen, ii: 127–128. *Pl.* 9, *fig.* 12.
1852. Giebel. Deutschl. petref., 645.
1856. " Insect. d. vorwelt, 167–168.
1872. Heer. Mitth. jahrb. k. ung. geol. anstalt, ii, th. i: 8.

6105. **Formica surinamensis** (recent). (Formicidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1830. Berendt. Insect. d. bernst., 37 (given on the authority of Schweigger as a recent species, but none such is quoted in Mayr's Index, 1883).

6106. **Formica trigona.** (Formicidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1822. Presl. Del. prag., i: 198.

6107. **Formica ungeri.** (Formicidæ.)

Locality: Radoboj, Croatia. Horizon: Mayencian.

1849. Heer. Insektenf. tertiärg. Oeningen, ii: 128–129. *Pl.* 10, *fig.* 1.
1852. Giebel. Deutschl. petref., 645.
1856. " Insect. d. vorwelt, 168.
1867. Heer. Neue denkschr. schweiz. gesellsch., xxii, mem. 4: 12, 13.
1867. " Foss. hymen., 12, 13.
1867. Mayr. Jahrb. k.-k. geol. reichsanst., xvii: 53 (says two species are confounded, one a Formica, the other a Lasius).
1867. " Stud. Rad. form., 7.

6108. **Gesomyrmex hörnesi.** (Formicidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1868. Mayr. Ameis. balt. bernst., 52–53. *Pl.* 2, *figs.* 38–41.

6109. **Glypta transversalis.** (Ichneumonidæ.)

Locality: Green River, Wyo. Horizon: Oligocene.

1890. Scudder. Tert. ins. N. A., 613–614. *Pl.* 10, *fig.* 25.

6110. **Gorytes ?** ———. (Crabronidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1886. Brischke. Schrift. naturf. gesellsch. Danzig, n. f., vi, iii: 278.
1886. " Hym. bernst., 1.

6111. **Hemiteles** ———. (Ichneumonidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1886. Brischke. Schrift. naturf. gesellsch. Danzig, n. f., vi, iii: 279.
1886. " Hym. bernst., 2

6112. Hemiteles fasciata. (Ichneumonidæ.)

Locality: Radoboj, Croatia. Horizon: Mayencian.

1849. Heer. Insektenf. tertiärg. Oeningen, ii: 170–171. *Pl.* 13, *fig.* 15.
1852. Giebel. Deutschl. petref., 647.
1856. " Insect. d. vorwelt, 157.

Hylotoma cineracea. See III, HEMIPTERA, Idem.

6113. Hymenopterites deperditus.

Locality: Spitzbergen. Horizon: Miocene.

1870. Heer. K. svensk. vetensk. akad. handl., viii, 7: 78. *Pl.* 16, *figs.* 44, 45.

6114. Hypoclinea ——. (Formicidæ.)

Locality: Brunstatt, Alsatia. Horizon: Middle Oligocene.

1890. Foerster. In litt.

6115. Hypoclinea anthracina. (Formicidæ.)

Locality: Radoboj, Croatia. Horizon: Mayencian.

1867. Mayr. Jahrb. k.-k. geol. reichsanst., xvii: 57 (quotes Heer's species as "Ponera" anthracina).
1867. " Stud. Rad. form., 11.

See also Poneropsis anthracina.

6116. Hypoclinea baltica. (Formicidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1868. Mayr. Ameis. balt. bernst., 64–67. *Pl.* 3, *figs.* 61–63; *pl.* 4, *fig.* 64.

6117. Hypoclinea constricta. (Formicidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1868. Mayr. Ameis. balt. bernst., 60–61. *Pl.* 3, *figs.* 50–51.

6118. Hypoclinea cornuta. (Formicidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1868. Mayr. Ameis. balt. bernst., 61. *Pl.* 3, *fig.* 52.

6119. Hypoclinea geinitzi. (Formicidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1868. Mayr. Ameis. balt. bernst., 58–60. *Pl.* 3, *figs.* 42–46.

6120. Hypoclinea goepperti. (Formicidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1868. Mayr. Ameis. balt. bernst., 56–58. *Pl.* 1, *figs.* 3, 7; *pl.* 3, *figs.* 42–46.

6121. Hypoclinea haueri. (Formicidæ.)

Locality: Radoboj, Croatia. Horizon: Mayencian.

1867. Mayr. Jahrb. k.-k. geol. reichsanst., xvii: 60–61 (named by Heer as Formica occultata). *Pl.* 1, *fig.* 11.
1867. " Stud. Rad. form., 14–15 *Pl.* 1, *fig.* 11.

See also Formica occultata, etc.

6122. Hypoclinea kutschlinica. (Formicidæ.)

Compared with H. 4-denticulata.

Locality: Kutschlin, Bohemia. Horizon: Miocene.

1881. Deichmüller. Foss. ins. diatomeensch. Kutschlin, 30–32. *Pl.* 21, *fig.* 13.
1881. " Verhandl. leop.-carol. deutsche akad. naturf., xlii: 322–324. *Pl.* 21, *fig.* 13.

6123. Hypoclinea longipennis. (Formicidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1868. Mayr. Ameis. balt. bernst., 67–68. *Pl.* 4, *fig.* 65.

6124. Hypoclinea nitida. (Formicidæ.)

Locality: Radoboj, Croatia. Horizon: Mayencian.

1867. Mayr. Jahrb. k.-k. geol. reichsanst., xvii: 57.
1867. " Stud. Rad. form., 11.
See also Ponera nitida, etc.

6125. Hypoclinea obliterata. (Formicidæ.)

Locality: Quesnel, British Columbia. Horizon: ——.

1877. Scudder. Rep. geol. surv. Can., 1875–'76: 267.
1877. " Ins. tert. Quesn., 2.
1877. " Rapp. opér. comm. géol. Can., 1875–'76: 295.
1890. " Tert. ins. N. A., 616. *Pl.* 3, *figs.* 25, 26.

6126. Hypoclinea sculpturata. (Formicidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1868. Mayr. Ameis. balt. bernst., 62. *Pl.* 3, *figs.* 53–55.

6127. Hypoclinea tertiaria. (Formicidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1868. Mayr. Ameis. balt. bernst., 62–64. *Pl.* 3, *figs.* 56–60.

6128. Ichneumon ——. (Ichneumonidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1886. Brischke. Schrift. naturf. gesellsch. Danzig, n. f., vi, iii: 278.
1886. " Hym. bernst., 1.

6129. Ichneumon ——. (Ichneumonidæ.)

Locality: Aix, France. Horizon: Ligurian.

1829. Curtis. Edinb. new. phil. journ., vii: 295.
1829. " Murchison-Lyell, Tert. form. Aix, 11.

6130. Ichneumon ——. (Ichneumonidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1822. Defrance. Dict. sc. nat., xxiii: 524 (des Ichneumons).
1829. Serres. Géogn. terrains tert., 242.
1830. Berendt. Ins. bernstein, 37.

6131. Ichneumon ——. (Ichneumonidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1835. Gravenhorst. Uebers. schles. gesellsch. vaterl. cult., 1834: 92.

6132. Ichneumon ———. (Ichneumonidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1820. Schlotheim. Petrefactenk., 43.

6133. Ichneumon ———. (Ichneumonidæ.)

Locality: Aix, France. Horizon: Ligurian.

1829. Serres. Géogn. terrains tert., 229.

6134. Ichneumon aquensis. (Ichneumonidæ.)

Locality: Aix, France. Horizon: Ligurian.

1861. Heer. Rech. climat pays tert., 153 (undescr.).

6135. Ichneumon ferrugineus. (Ichneumonidæ.)

Locality: Copal. Horizon: Recent.

1776. Bloch. Beschäft. berl. gesellsch. naturf. freunde, ii: 165–166. *Pl.* 3, *fig.* 3.

6136. Ichneumon infernalis. (Ichneumonidæ.)

Locality: Oeningen, Baden. Horizon: Tortonian.

1865. Heer. Urwelt der Schweiz. *Fig.* 294 on *p.* 386.
1872. " Monde prim. Suisse. *Fig.* 294 on *p.* 474.
1876. " Prim. world Switz., ii. *Fig.* 294 on *p.* 44.
1879. " Urwelt der Schweiz, 2^e aufl. *Fig.* 336 on *p.* 412.

6137. Ichneumon longævus. (Ichneumonidæ.)

Locality: Radoboj, Croatia. Horizon: Mayencian.

1849. Heer. Insektenf. tertiärg. Oeningen, ii: 166–167. *Pl.* 13, *fig.* 11.
1852. Giebel. Deutschl. petref., 647.
1856. " Insect. d. vorwelt, 154.

6138. Ichneumon petrinus. (Ichneumonidæ.)

Locality: White River, Colo. Horizon: Oligocene.

1877. Scudder. Bull. U. S. geol. surv. terr., iii: 743.
1890. " Tert. ins. N. A., 608. *Pl.* 5, *figs.* 14, 15.

6139. Ichneumonites bellus. (Ichneumonidæ.)

Locality: Oeningen, Baden. Horizon: Mayencian.

1867. Heer. Neue denkschr. schweiz. gesellsch., xxii, mem. 4: 35. *Pl.* 3, *figs.* 19, 20.
1867. " Foss. hymen., 35. *Pl.* 3, *figs.* 19, 20.
1885. Scudder. Zittel, Handb. palaeont., i, th. ii: 817. *Fig.* 1101.
1886. " Zittel-Barrois, Traité de paléont., ii: 819. *Fig.* 1118.

6140. Ichneumonites (Trogus?) fusiformis. (Ichneumonidæ.)

Locality: Radoboj, Croatia. Horizon: Mayencian.

1867. Heer. Neue denkschr. schweiz. gesellsch., xxii, mem. 4: 35–36. *Pl.* 3, *fig.* 16.
1867. " Foss. hymen., 35–36. *Pl.* 3, *fig.* 16.

6141. **Imhoffia nigra.** (Formicidæ.)

Locality: Oeningen, Baden. Horizon: Tortonian.

1849. Heer. Insektenf. tertiärg. Oeningen, ii: 153–155. *Pl.* 12, *fig.* 10.
1852. Giebel. Deutschl. petref., 646.
1854. Pictet. Traité de paléont., 2e éd., ii: 383. *Pl.* 40, *fig.* 17.
1853–'56. Bronn. Lethæa geogn., 3e aufl., iii: 646. *Pl.* 42', *figs.* 22*ab*.
1856. Giebel. Insect. d. vorwelt, 176–177.

6142. **Imhoffia pallida.** (Formicidæ.)

Locality: Oeningen, Baden. Horizon: Tortonian.

1865. Heer. Urwelt der Schweiz. *Fig.* 291 on *p.* 386.
1867. " Neue denkschr. schweiz. gesellsch., xxii, mem. 4: 28–29. *Pl.* 2, *figs.* 9, 9*bc*.
1867. " Foss. hymen., 28–29. *Pl.* 2, *figs.* 9, 9*bc*.
1872. " Monde prim. Suisse. *Fig.* 291 on *p.* 474.
1876. " Prim. world Switz., ii. *Fig.* 291 on *p.* 44.
1879. " Urwelt der Schweiz, 2e aufl. *Fig.* 333 on *p.* 412.

Lacoophrys (vic.). ———. See ——— ——— (Braconidæ) Scudder, x: 18.

6143. **Lampromyrmex gracillimus.** (Formicidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1868. Mayr. Ameis. balt. bernst., 95. *Pl.* 5, *figs.* 97–98.

6144. **Lasius edentatus.** (Formicidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1868. Mayr. Ameis. balt. bernst., 46–47.

6145. **Lasius fragilis.** (Formicidæ.)

Locality: Radoboj, Croatia. Horizon: Mayencian.

1867. Mayr. Jahrb. k.-k. geol. reichsanst., xvii: 56.
1867. " Stud. Rad. form., 10.

See also Formica fragilis.

6146. **Lasius globularis.** (Formicidæ.)

Locality: Radoboj, Croatia. Horizon: Mayencian.

1867. Mayr. Jahrb. k.-k. geol. reichsanst., xvii: 54.
1867. " Stud. Rad. form., 8.

See also Formica globularis, Liometopum antiquum.

6147. **Lasius longævus.** (Formicidæ.)

Locality: Radoboj, Croatia. Horizon: Mayencian.

1867. Mayr. Jahrb. k.-k. geol. reichsanst., xvii: 54.
1867. " Stud. Rad. form., 8.

See also Formica longæva.

6148. **Lasius minutulus.** (Formicidæ.)

Locality: Radoboj, Croatia. Horizon: Mayencian.

1867. Mayr. Jahrb. k.-k. geol. reichsanst., xvii: 55.
1867. " Stud. Rad. form., 9.

See also Formica minutula.

6149. Lasius obliteratus. (Formicidæ.)

Locality: Radoboj, Croatia. Horizon: Mayencian.

1867.	Mayr.	Jahrb. k.-k. geol. reichsanst., xvii: 56.
1867.	"	Stud. Rad. form., 10.

See also Formica obliterata.

6150. Lasius oblongus. (Formicidæ.)

Locality: Schossnitz, Silesia. Horizon: Miocene.

1869.	Assmann.	Beitr. insektenf. d. vorwelt (Schles. zeitschr. f. ent., (2), i), 38–39. *Pl.* 1, *figs.* 1, 1*a*.

6151. Lasius obscurus. (Formicidæ.)

Compared with L. niger L.

Locality: Radoboj, Croatia. Horizon: Mayencian.

1867.	Mayr.	Jahrb. k.-k. geol. reichsanst., xvii: 52.
1867.	"	Stud. Rad. form., 6.

See also Formica obscura.

6152. Lasius occultatus. (Formicidæ.)

Locality: Radoboj, Croatia. Horizon: Mayencian.

1867.	Mayr.	Jahrb. k.-k. geol. reischsanst., xvii: 54–55.
1867.	"	Stud. Rad. form., 8–9.

See also Formica occultata, etc.

6153. Lasius pumilus. (Formicidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1868.	Mayr.	Ameis. balt. bernst., 46. *Pl.* 2, *fig.* 33.

6154. Lasius punctulatus. (Formicidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1868.	Mayr.	Ameis. balt. bernst., 46. *Pl.* 2, *fig.* 34.

6155. Lasius redtenbacheri. (Formicidæ.)

Locality: Radoboj, Croatia. Horizon: Mayencian.

1867.	Mayr.	Jahrb. k.-k. geol. reichsanst., xvii: 54.
1867.	"	Stud. Rad. form., 8.

See also Formica redtenbacheri.

6156. Lasius schiefferdeckeri. (Formicidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1868.	Mayr.	Ameis. balt. bernst., 44–46. *Pl.* 2, *figs.* 27–32.

6157. Lasius terreus. (Formicidæ.)

Locality: Green River, Wyo. Horizon: Oligocene.

1878.	Scudder.	Bull. U. S. geol. surv. terr., iv: 747–748.
1890.	"	Tert. ins. N. A., 618–619. *Pl.* 10, *fig.* 23.

Lasius ungeri. See Formica ungeri.

6158. Leptalea ——— (2 sp.). (Formicidæ.)

Locality: Sicilian amber. Horizon: ———.

1840.	Erichson.	Arch. naturg., v, 2: 309.
1840.	"	Ber. wiss. leist. entom., 1838: 29.

See also Pseudomyrme ——— Scudder, etc.

6159. Leptothorax gracilis. (Formicidæ.)

Locality: Prussian amber. **Horizon:** Ligurian.

1868. **Mayr.** Ameis. balt. bernst., 89–90. *Pl.* 5, *figs.* 89–92.

Leptothorax pusillus. See Myrmica pusilla.

6160. Liometopum antiquum. (Formicidæ.)

Locality: Radoboj, Croatia. **Horizon:** Mayencian.

1867. **Mayr.** Jahrb. k.-k. geol. reichsanst., xvii: 60 (named by Heer as Formica globularis). *Pl.* 1, *fig.* 10.
1867. " Stud. Rad. form., 14. *Pl.* 1, *fig.* 10.

See also Lasius globularis, Formica globularis.

6161. Liometopum imhoffii. (Formicidæ.)

Locality: Radoboj, Croatia. **Horizon:** Mayencian.

1867. **Mayr.** Jahrb. k.-k. geol. reichsanst., xvii: 55 (imhoffi).
1867. " Stud. Rad. form., 9.

See also Formica imhoffii, Poneropsis imhoffii, Liometopum schmidtii, Formica schmidtii, Poneropsis schmidtii.

6162. Liometopum pingue. (Formicidæ.)

Locality: White River, Utah. **Horizon:** Oligocene.

1877. **Scudder.** Bull. U. S. geol. surv. terr., iii: 742–743.
1890. " Tert. ins. N. A., 617. *Pl.* 5, *fig.* 10.

See also Myrmica ——— Scudder, 1867.

6163. Liometopum schmidtii. (Formicidæ.)

Locality: Radoboj, Croatia. **Horizon:** Mayencian.

1867. **Mayr.** Jahrb. k.-k. geol. reichsanst., xvii: 55–56 (Schmidti) (=L. imhoffii).
1867. " Stud. Rad. form., 9–10.

See also Liometopum imhoffii, etc.

6164. Lithotorus cressoni. (Ichneumonidæ.)

Locality: Green River, Wyo. **Horizon:** Oligocene.

1890. **Scudder.** Tert. ins. N. A., 609. *Pl.* 10, *fig.* 21.

6165. Lonchomyrmex freyeri. (Formicidæ.)

Locality: Radoboj, Croatia. **Horizon:** Mayencian.

1867. **Mayr.** Jahrb. k.-k. geol. reichsanst., xvii: 56, 61. *Pl.* 1, *fig.* 12.
1867. " Stud. Rad. form., 10, 15. *Pl.* 1, *fig.* 12.
1885. **Scudder.** Zittel, Handb. palaeont., i, th. ii: 818. *Fig.* 1104.
1886. " Zittel-Barrois, Traité de paléont., ii: 820. *Fig.* 1120.

See also Formica freyeri.

6166. Lonchomyrmex nigritus. (Formicidæ.)

Locality: Schossnitz, Silesia. **Horizon:** Miocene.

1869. **Assmann.** Beitr. insektenf. d. vorwelt (Schles. zeitschr. f. ent., (2), i), 39–40. *Pl.* 1, *figs.* 2, 2*a*.

6167. Lophyrus ———. (Tenthredinidæ.)

Locality: Prussian amber. **Horizon:** Ligurian.

1886. **Brischke.** Schrift. naturf. gesellsch. Danzig, n. f., vi, iii: 279.
1886. " Hym. bernst., 2.

6168. Lophyrus ? ——— (larva). (Tenthredinidæ.)
Locality: Prussian amber. Horizon: Ligurian.
1856. Menge. Progr. petrischule Danzig, 1856: 24.

6169. Lyda ——— (larva). (Tenthredinidæ.)
Locality: Prussian amber. Horizon: Ligurian.
1856. Menge. Progr. petrischule Danzig, 1856: 24.

6170. Macrocentrus ———. (Braconidæ.)
Locality: Prussian amber. Horizon: Ligurian.
1886. Brischke. Schrift. naturf. gesellsch. Danzig, n. f., vi, iii: 279.
1886. " Hym. bernst., 2.

Macrocentrus (vic.) ———. See ——— ——— (Braconidæ) Scudder, x: 18.

6171. Macromischa beyrichi. (Formicidæ.)
Locality: Prussian amber. Horizon: Ligurian.
1868. Mayr. Ameis. balt. bernst., 84. *Pl.* 4, *figs.* 80–81.

6172. Macromischa petiolata. (Formicidæ.)
Locality: Prussian amber. Horizon: Ligurian.
1868. Mayr. Ameis. balt. bernst., 85. *Pl.* 4, *figs.* 83–84.

6173. Macromischa rudis. (Formicidæ.)
Locality: Prussian amber. Horizon: Ligurian.
1868. Mayr. Ameis. balt. bernst., 85–86. *Pl.* 4, *fig.* 85.

6174. Macromischa rugosostriata. (Formicidæ.)
Locality: Prussian amber. Horizon: Ligurian.
1868. Mayr. Ameis. balt. bernst., 84. *Pl.* 4, *fig.* 82.

6175. Melipona (vic.) ———. (Apidæ.)
Locality: Prussian amber. Horizon: Ligurian.
1886. Brischke. Schrift. naturf. gesellsch. Danzig, n. f., vi, iii: 278.
1886. " Hym. bernst., 1.

6176. Mellinus ———. (Crabronidæ.)
Locality: Prussian amber. Horizon: Ligurian.
1886. Brischke. Schrift. naturf. gesellsch. Danzig, n. f., vi, iii: 278.
1886. " Hym. bernst., 1.

6177. Mesochorus (vic.) ———. (Ichneumonidæ.)
Locality: Prussian amber. Horizon: Ligurian.
1886. Brischke. Schrift. naturf. gesellsch. Danzig, n. f., vi, iii: 279.
1886. " Hym. bernst., 2.

6178. Mesoleptus (vic.) ———. (Ichneumonidæ.)
Locality: Prussian amber. Horizon: Ligurian.
1886. Brischke. Schrift. naturf. gesellsch. Danzig, n. f., vi, iii: 279.
1886. " Hym. bernst., 2.

6179. Meteorus ——. (Braconidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1886. Brischke. Schrift. naturf. gesellsch. Danzig, n. f., vi, iii: 279.
1886. " Hym. bernst., 2.

Meteorus (vic.) ——. See —— —— (Braconidæ) Scudder, x: 28.

Mimesa ——. See Psen —— Brischke.

6180. Monomorium pilipes. (Formicidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1868. Mayr. Ameis. balt. bernst., 91–92. *Pl.* 5, *figs.* 93–94.

6181. Mutilla ——. (Mutillidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1886. Brischke. Schrift. naturf. gesellsch. Danzig, n. f., vi, iii: 278.
1886. " Hym. bernst., 1.

6182. Mutilla ——. (Mutillidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1827. Brongniart. Dict. sc. nat., li: 234 (mutilles).

6183. Mutilla ——. (Mutillidæ.)

Locality: Brunstatt, Alsatia. Horizon: Middle Oligocene.

1890. Foerster. In litt.

6184. Myrmar ——. (Proctotrupidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1868. Duisburg. Schriften k. physik.-ökon. gesellsch. Königsberg, ix: 24–28. *Figs.* 1, 2.
See also Myrmar duisburgi.

6185. Myrmar duisburgi. (Proctotrupidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1877. Stein. Mitth. münch. entom. ver., i: 30.
1885. Scudder. Zittel, Handb. palaeont., i, th. ii: 817. *Fig.* 1099.
1886. " Zittel-Barrois, Traité de paléont., ii: 819. *Fig.* 1116.
See also Myrmar —— Duisburg.

6186. Myrmica ——. (Formicidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1832. Burmeister. Handb. ent., i: 636.
1836. " Man. ent., 577.

6187. Myrmica ——. (Formicidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1856. Menge. Progr. petrischule Danzig, 1856: 25.

6188. Myrmica ——. (Formicidæ.)

Locality: Green River, Wyo. Horizon: Oligocene.

1867. Scudder. Proc. Bost. soc. nat. hist., xi: 117.
See also Liometopum pingue.

6189. Myrmica —— (Formicidæ.)

Locality: Green River, Wyo. Horizon: Oligocene.

1878. Scudder. Bull. U. S. geol. surv. terr., iv: 748.
1890. " Tert. ins. N. A., 615–616. *Pl.* 10, *fig.* 22.

6190. Myrmica ——. (Formicidæ.)

Locality: Gurnet Bay, Isle of Wight. Horizon: Bembridge Limestone.

1879. Woodward. Quart. journ. geol. soc., Lond., xxxv: 344.
1879. " Geol. mag., n. s., v: 89.

6191. Myrmica æmula. (Formicidæ.)

Locality: Parschlug, Styria. Horizon: Tortonian.

1849. Heer. Insektenf. tertiärg. Oeningen, ii: 161. *Pl.* 13, *fig.* 4.
1852. Giebel. Deutschl. petref., 646.
1856. " Insect. d. vorwelt, 179.

6192. Myrmica angusticollis. (Formicidæ.)

Locality: Oeningen, Baden. Horizon: Tortonian.

1849. Heer. Insektenf. tertiärg. Oeningen, ii: 162–163. *Pl.* 13, *fig.* 7.
1852. Giebel. Deutschl. petref., 646.
1856. " Insect. d. vorwelt, 180.

6193. Myrmica bicolor. (Formicidæ.)

Locality: Radoboj, Croatia. Horizon: Mayencian.

1867. Heer. Neue denkschr. schweiz. gesellsch., xxii, mem. 4: 31. *Pl.* 2, *figs.* 11, 11*b*.
1867. " Foss. hymen., 31. *Pl.* 2, *figs.* 11, 11*b*.
1867. Mayr. Jahrb. k.-k. geol. reichsanst., xvii: 60.
1867. " Stud. Rad. form., 14 (= M. tertiaria radobojana).
See also Myrmica tertiaria, etc.

6194. Myrmica bremii. (Formicidæ.)

Locality: Radoboj, Croatia. Horizon: Mayencian.

1849. Heer. Insektenf. tertiärg. Oeningen, ii: 161–162. *Pl.* 13, *fig.* 5.
1852. Giebel. Deutschl. petref., 646.
1856. " Insect. d. vorwelt, 179–180.

6195. Myrmica concinna. (Formicidæ.)

Locality: Radoboj, Croatia. Horizon: Mayencian.

1867. Heer. Neue denkschr. schweiz. gesellsch., xxii, mem. 4: 32. *Pl.* 2, *figs.* 13, 13*b*.
1867. " Foss. hymen., 32. *Pl.* 2, *figs.* 13, 13*b*.
1867. Mayr. Jahrb. k.-k. geol. reichsanst., xvii: 59–60.
1867. " Stud. Rad. form., 13–14.

6196. Myrmica duisburgi. (Formicidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1868. Mayr. Ameis. balt. bernst., 87–88. *Pl.* 5, *figs.* 87–88.

6197. **Myrmica jurinei.** (Formicidæ.)

Locality: Radoboj, Croatia. **Horizon:** Mayencian.

1849.	Heer.	Insektenf. tertiärg. Oeningen, ii: 163–164. *Pl.* 13, *fig.* 8.
1852.	Giebel.	Deutschl. petref., 646.
1856.	"	Insect. d. vorwelt, 180.
1867.	Mayr.	Jahrb. k.-k. geol. reichsanst., xvii: 59.
1867.	"	Stud. Rad. form., 13.

6198. **Myrmica longispinosa.** (Formicidæ.)

Locality: Prussian amber. **Horizon:** Ligurian.

1868.	Mayr.	Ameis. balt. bernst., 87. *Pl.* 4, *fig.* 86.

6199. **Myrmica macrocephala.** (Formicidæ.)

Locality: Oeningen, Baden. **Horizon:** Tortonian.

1849.	Heer.	Insektenf. tertiärg Oeningen, ii: 158–159. *Pl.* 12, *fig.* 14.
1852.	Giebel.	Deutschl. petref., 646.
1856.	"	Insect. d. vorwelt, 178.

6200. **Myrmica molassica.** (Formicidæ.)

Locality: Oeningen, Baden. **Horizon:** Tortonian.

1849.	Heer.	Insektenf. tertiärg. Oeningen, ii: 162. *Pl.* 13, *fig.* 6.
1852.	Giebel.	Deutschl. petref., 646.
1856.	"	Insect. d. vorwelt, 180.

6201. **Myrmica ? nebulosa.** (Formicidæ.)

Locality: Krottensee, Bohemia. **Horizon:** Aquitanian.

1877.	Novák.	Sitzungsb. k. acad. wiss. Wien, lxxvi: 91. *Pl.* 3, *fig.* 1.
1877.	"	Fauna egerer tertiärb., 21. *Pl.* 3, *fig.* 1.

6202. **Myrmica obsoleta.** (Formicidæ.)

Locality: Parschlug, Styria. **Horizon:** Tortonian.

1849.	Heer.	Insektenf. tertiärg. Oeningen, ii: 160. *Pl.* 13, *fig.* 3.
1852.	Giebel.	Deutschl. petref., 646.
1856.	"	Insect. d. vorwelt, 179.
1867.	Heer.	Neue denkschr. schweiz. gesellsch., xxii, mem. 4: 30.
1867.	"	Foss. hymen., 30.

Myrmica œningensis. See Myrmica tertiaria œningensis.

6203. **Myrmica pusilla.** (Formicidæ.)

Locality: Radoboj, Croatia. **Horizon:** Mayencian.

1849.	Heer.	Insektenf. tertiärg. Oeningen, ii: 164–165. *Pl.* 13, *fig.* 9.
1852.	Giebel.	Deutschl. petref., 646.
1856.	"	Insect. d. vorwelt, 180.
1867.	Heer.	Neue denkschr. schweiz. gesellsch., xxii, mem. 4: 32–33. *Pl.* 2, *fig.* 14.
1867.	"	Foss. hymen., 32–33. *Pl.* 2, *fig.* 14.
1867.	Mayr.	Jahrb. k.-k. geol. reichsanst., xvii: 59 (one specimen is probably a Leptothorax, another perhaps a Pheidole).
1867.	"	Stud. Rad. form., 13.

See also Formica obesa, etc.

Myrmica radobojana. See Myrmica tertiaria radobojana.

Myrmica ruficeps. See Myrmica rugiceps.

6189. Myrmica —— (Formicidæ.)

Locality: Green River, Wyo. **Horizon:** Oligocene.

1878. Scudder. Bull. U. S. geol. surv. terr., iv: 748.
1890. " Tert. ins. N. A., 615–616. *Pl.* 10, *fig.* 22.

6190. Myrmica ——. (Formicidæ.)

Locality: Gurnet Bay, Isle of Wight. **Horizon:** Bembridge Limestone.

1879. Woodward. Quart. journ. geol. soc., Lond., xxxv: 344.
1879. " Geol. mag., n. s., v: 89.

6191. Myrmica æmula. (Formicidæ.)

Locality: Parschlug, Styria. **Horizon:** Tortonian.

1849. Heer. Insektenf. tertiärg. Oeningen, ii: 161. *Pl.* 13, *fig.* 4.
1852. Giebel. Deutschl. petref., 646.
1856. " Insect. d. vorwelt, 179.

6192. Myrmica angusticollis. (Formicidæ.)

Locality: Oeningen, Baden. **Horizon:** Tortonian.

1849. Heer. Insektenf. tertiärg. Oeningen, ii: 162–163. *Pl.* 13, *fig.* 7.
1852. Giebel. Deutschl. petref., 646.
1856. " Insect. d. vorwelt, 180.

6193. Myrmica bicolor. (Formicidæ.)

Locality: Radoboj, Croatia. **Horizon:** Mayencian.

1867. Heer. Neue denkschr. schweiz. gesellsch., xxii, mem. 4: 31. *Pl.* 2, *figs.* 11, 11*b*.
1867. " Foss. hymen., 31. *Pl.* 2, *figs.* 11, 11*b*.
1867. Mayr. Jahrb. k.-k. geol. reichsanst., xvii: 60.
1867. " Stud. Rad. form., 14 (= M. tertiaria radobojana).
See also Myrmica tertiaria, etc.

6194. Myrmica bremii. (Formicidæ.)

Locality: Radoboj, Croatia. **Horizon:** Mayencian.

1849. Heer. Insektenf. tertiärg. Oeningen, ii: 161–162. *Pl.* 13, *fig.* 5.
1852. Giebel. Deutschl. petref., 646.
1856. " Insect. d. vorwelt, 179–180.

6195. Myrmica concinna. (Formicidæ.)

Locality: Radoboj, Croatia. **Horizon:** Mayencian.

1867. Heer. Neue denkschr. schweiz. gesellsch., xxii, mem. 4: 32. *Pl.* 2, *figs.* 13, 13*b*.
1867. " Foss. hymen., 32. *Pl.* 2, *figs.* 13, 13*b*.
1867. Mayr. Jahrb. k.-k. geol. reichsanst., xvii: 59–60.
1867. " Stud. Rad. form., 13–14.

6196. Myrmica duisburgi. (Formicidæ.)

Locality: Prussian amber. **Horizon:** Ligurian.

1868. Mayr. Ameis. balt. bernst., 87–88. *Pl.* 5, *figs.* 87–88.

6197. Myrmica jurinei. (Formicidæ.)

Locality: Radoboj, Croatia. Horizon: Mayencian.

1849. Heer. Insektenf. tertiärg. Oeningen, ii: 163–164. *Pl.* 13, *fig.* 8.
1852. Giebel. Deutschl. petref., 646.
1856. " Insect. d. vorwelt, 180.
1867. Mayr. Jahrb. k.-k. geol. reichsanst., xvii: 59.
1867. " Stud. Rad. form., 13.

6198. Myrmica longispinosa. (Formicidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1868. Mayr. Ameis. balt. bernst., 87. *Pl.* 4, *fig.* 86.

6199. Myrmica macrocephala. (Formicidæ.)

Locality: Oeningen, Baden. Horizon: Tortonian.

1849. Heer. Insektenf. tertiärg Oeningen, ii: 158–159. *Pl.* 12, *fig.* 14.
1852. Giebel. Deutschl. petref., 646.
1856. " Insect. d. vorwelt, 178.

6200. Myrmica molassica. (Formicidæ.)

Locality: Oeningen, Baden. Horizon: Tortonian.

1849. Heer. Insektenf. tertiärg. Oeningen, ii: 162. *Pl.* 13, *fig.* 6.
1852. Giebel. Deutschl. petref., 646.
1856. " Insect. d. vorwelt, 180.

6201. Myrmica? nebulosa. (Formicidæ.)

Locality: Krottensee, Bohemia. Horizon: Aquitanian.

1877. Novák. Sitzungsb. k. acad. wiss. Wien, lxxvi: 91. *Pl.* 3, *fig.* 1.
1877. " Fauna egerer tertiärb., 21. *Pl.* 3, *fig.* 1.

6202. Myrmica obsoleta. (Formicidæ.)

Locality: Parschlug, Styria. Horizon: Tortonian.

1849. Heer. Insektenf. tertiärg. Oeningen, ii: 160. *Pl.* 13, *fig.* 3.
1852. Giebel. Deutschl. petref., 646.
1856. " Insect. d. vorwelt, 179.
1867. Heer. Neue denkschr. schweiz. gesellsch., xxii, mem. 4: 30.
1867. " Foss. hymen., 30.

Myrmica œningensis. See Myrmica tertiaria œningensis.

6203. Myrmica pusilla. (Formicidæ.)

Locality: Radoboj, Croatia. Horizon: Mayencian.

1849. Heer. Insektenf. tertiärg. Oeningen, ii: 164–165. *Pl.* 13, *fig.* 9.
1852. Giebel. Deutschl. petref., 646.
1856. " Insect. d. vorwelt, 180.
1867. Heer. Neue denkschr. schweiz. gesellsch., xxii, mem. 4: 32–33. *Pl.* 2, *fig.* 14.
1867. " Foss. hymen., 32–33. *Pl.* 2, *fig.* 14.
1867. Mayr. Jahrb. k.-k. geol. reichsanst., xvii: 59 (one specimen is probably a Leptothorax, another perhaps a Pheidole).
1867. " Stud. Rad. form., 13.

See also Formica obesa, etc.

Myrmica radobojana. See Myrmica tertiaria radobojana.

Myrmica ruficeps. See Myrmica rugiceps.

6204. Myrmica rugiceps. (Formicidæ.)

Localities: Oeningen, Baden; Schossnitz, Silesia. Horizon: Tortonian.

1849. Heer. Insektenf. tertiärg. Oeningen, ii: 160–161. *Pl.* 13, *fig.* 2.
1852. Giebel. Deutschl. petref., 646.
1855. Goeppert. Tert. flora Schossnitz, p. vii (ruficeps). *Pl.* 26, *figs.* 50–51.
1856. Giebel. Insect. d. vorwelt, 179.
See also Pheidologeton schossnicensis.

6205. Myrmica tertiaria. (Formicidæ.)

Localities: Oeningen, Baden: Radoboj, Croatia. Horizons: Tortonian, Mayencian.

1849. Heer. Insektenf. tertiärg. Oeningen, ii: 159–160. *Pl.* 13, *figs.* 1*a–c*.
1852. Giebel. Deutschl. petref., 646.
1856. " Insect. d. vorwelt, 179.
1865. Heer. Urwelt der Schweiz. *Fig.* 293 on *p.* 386.
1867. " Neue denkschr. schweiz. gesellsch., xxii, mem. 4: 30. *Pl.* 2, *figs.* 10, 10*b*.
1867. " Foss. hymen., 30. *Pl.* 2, *figs.* 10, 10*b*.
1872. " Monde prim. Suisse. *Fig.* 293 on *p.* 474.
1876. " Prim. world Switz., ii. *Fig.* 293 on *p.* 44.
1879. " Urwelt der Schweiz, 2ᵉ aufl. *Fig.* 335 on *p.* 412.
See also Myrmica tertiaria œningensis, M. tertiaria radobojana, M. bicolor.

6206. Myrmica tertiaria œningensis. (Formicidæ.)

Locality: Oeningen, Baden. Horizon: Tortonian.

1849. Heer. Insektenf. tertiärg. Oeningen, ii: 160. *Pl.* 13, *fig.* 1*c*.
See also Myrmica tertiaria, etc.

6207. Myrmica tertiaria radobojana. (Formicidæ.)

Locality: Radoboj, Croatia. Horizon: Mayencian.

1849. Heer. Insektenf. tertiärg. Oeningen, ii: 159. *Pl.* 13, *figs.* 1*ab*.
1867. Mayr. Jahrb. k.-k. geol. reichsanst., xvii: 58–59.
1867. " Stud. Rad. form., 12–13.
See also Myrmica tertiaria, etc.

6208. Myrmica venusta. (Formicidæ.)

Locality: Radoboj, Croatia. Horizon: Mayencian.

1867. Heer. Neue denkschr. schweiz. gesellsch., xxii, mem. 4: 31–32. *Pl.* 2, *figs.* 12, 12*b*.
1867. " Foss. hymen., 31–32. *Pl.* 2, *figs.* 12, 12*b*.
See also Solenopsis? venusta.

6209. Myrmicites ———. (Formicidæ.)

Locality: Brunstatt, Alsatia. Horizon: Middle Oligocene.

1890. Foerster. In litt.

6210. Myrmicium boreale. (Formicidæ.)

Locality: Spitzbergen. Horizon: Miocene.

1870. Heer. K. svensk. vetensk. akad. handl., viii, 7: 78. *Pl.* 16, *figs.* 46, 46*b*.

6211. Neuropachys ———. (Uroceridæ.)

Locality: Radoboj, Croatia. Horizon: Mayencian.

1858. Heer. Ber. versamml. deutsch. naturf., xxxii: 118 (undescr.).

6212. Œcophylla ———. (Formicidæ.)

Locality: Brunstatt, Alsatia. Horizon: Middle Oligocene.

1890. Foerster. In litt.

6213. Œcophylla brischkei. (Formicidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1868. Mayr. Ameis. balt. bernst., 31–32. *Pl.* 1, *figs.* 12–13.

6214. Œcophylla obesa radobojana. (Formicidæ.)

Compared with O. smaragdina.

Locality: Kutschlin, Bohemia. Horizon: Miocene.

1867. Mayr. Jahrb. k.-k. geol. reichsanst., xvii: 50–51.
1867. “ Stud. Rad. form., 4–5.
1881. Deichmüller. Foss. ins. diatomeensch. Kutschlin, 33–35. *Pl.* 21, *figs.* 14, 15, 15*a*.
1881. “ Verhandl. leop.-carol. deutsch. akad. naturf., xlii: 325–327. *Pl.* 21, *figs.* 14, 15, 15*a*.

See also Formica obesa, etc.

Œcophylla radobojana. See Œcophylla obesa radobojana.

6215. Ophion ———. (Ichneumonidæ.)

Locality: Aix, France. Horizon: Ligurian.

1829. Serres. Géogn. terrains tert., 229.

6216. Ophion (or Campoplex) ———. (Ichneumonidæ.)

Locality: Pianico, Italy. Horizon: Quaternary.

1882. Sordelli. Alc. ins. foss. Lombardia, 5–6. *Fig.*
1882. “ Bull. soc. ent. ital., xiv: 228–229. *Fig.*

6217. Osmia ———. (Apidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1856. Menge. Progr. petrischule Danzig, 1856: 26.

6218. Osmia antiqua. (Apidæ.)

Locality: Oeningen, Baden. Horizon: Tortonian.

1849. Heer. Insektenf. tertiärg. Oeningen, ii: 95–96. *Pl.* 7, *fig.* 2.
1852. Giebel. Deutschl. petref., 645.
1856. “ Insect. d. vorwelt, 182.

6219. Osmia carbonum. (Apidæ.)

Locality: Rott, Rhenish Prussia. Horizon: Aquitanian.

1862. Heyden. Palaeontogr., x: 75. *Pl.* 10, *figs.* 11, 12.

6220. Osmia dubia. (Apidæ.)

Locality: Orsberg (Rhenish Prussia?). Horizon: Miocene.

1856. Giebel. Insect. d. vorwelt, 182.

See also Apiaria dubia.

6221. Passaloecus ———. (Crabronidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1886. Brischke. Schrift. naturf. gesellsch. Danzig, n. f., vi, iii: 278.
1886. “ Hym. bernst., 1.

6222. Pepsis ———. (Pompilidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1832. Burmeister. Handb. ent., i: 636.
1836. " Man. ent., 577.

6223. Perilampus ———. (Chalcididæ.)

Locality: Prussian amber. Horizon: Ligurian.

1886. Brischke. Schrift. naturf. gesellsch. Danzig, n. f., vi: iii: 279.
1886. " Hym. bernst., 2.

6224. Pezomachus ———. (Ichneumonidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1886. Brischke. Schrift. naturf. gesellsch. Danzig, n. f., vi, iii: 279.
1886. " Hym. bernst., 2.

Pheidole pusilla. See Myrmica pusilla.

6225. Pheidologeton antiquus. (Formicidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1868. Mayr. Ameis. balt. bernst., 93. *Pl.* 5, *figs.* 95–96.

6226. Pheidologeton bohemicus. (Formicidæ.)

Locality: Krottensee, Bohemia. Horizon: Aquitanian

1877. Novák. Sitzungsb. k. akad. wiss. Wien, lxxvi: 90–91. *Pl.* 3, *fig.* 3.
1877. " Fauna egerer tertiärb., 20–21. *Pl.* 3, *fig.* 3.

6227. Pheidologeton schossnicensis. (Formicidæ.)

Locality: Schossnitz, Silesia. Horizon: Miocene.

1869. Assmann. Beitr. insectenf. d. vorwelt (Schles. zeitschr. f. ent., (2), i), 40. *Pl.* 1, *figs.* 3, 3*a*.

See also Myrmica rugiceps.

6228. Phygadeuon ———. (Ichneumonidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1886. Brischke. Schrift. naturf. gesellsch. Danzig, n. f., vi, iii: 279.
1886. " Hym. bernst., 2.

6229. Pimpla ———. (Ichneumonidæ.)

Locality: ———. Horizon: ———.

1846. Giebel. Paläozool., 281.

6230. Pimpla ———. (Ichneumonidæ.)

Locality: Aix, France. Horizon: Oligocene.

1854. Pictet. Traité de paléont., 2e éd., ii: 382 (fide Serres, MS.).

6231. Pimpla ———. (Ichneumonidæ.)

Locality: Florissant, Colo. Horizon: Oligocene.

1881. Scudder. Bull. U. S. geol. surv. terr., vi: 290.

6232. Pimpla antiqua. (Ichneumonidæ.)

Locality: Aix, France. Horizon: Ligurian.

1852. Saussure. Rev. mag. zool., iv: 580. *Pl.* 23, *fig.* 5.
1852. “ Nouv. hym. foss., 1–2. *Pl.* 23, *fig.* 5.

6233. Pimpla (Rhyssa) antiqua. (Ichneumonidæ.)

Compared with Pimpla (Rhyssa) persuasoria (L.).

Locality: Radoboj, Croatia. Horizon: Mayencian.

1867. Heer. Neue denkschr. gesellsch., xxii, mem. 4: 36. *Pl.* 3, *fig.* 18.
1867. “ Foss. hymen., 36. *Pl.* 3, *fig.* 18.

6234. Pimpla decessa. (Ichneumonidæ.)

Compared with P. instigator Fabr.

Locality: Quesnel, British Columbia. Horizon: ———.

1877. Scudder. Rep. geol. surv. Can., 1875–'76: 269.
1877. “ Ins. tert. Quesnel, 4.
1877. “ Rapp. opér. comm. géol. Can., 1875–'76: 297–298.
1890. “ Tert. ins. N. A., 612–613. *Pl.* 3, *fig.* 27.

6235. Pimpla saussurii. (Ichneumonidæ.)

Locality: Aix, France. Horizon: Ligurian.

1856. Heer. Viert. naturf. gesellsch. Zürich, i: 29. *Pl.* 2, *fig.* 15.

6236. Pimpla saxea. (Ichneumonidæ.)

Locality: Quesnel, British Columbia. Horizon: ———.

1877. Scudder. Rep. geol. surv. Can., 1875–'76: 268.
1877. “ Ins. tert. Quesnel, 3.
1877. “ Rapp. opér. comm. géol. Can., 1875–76: 296–297.
1890. “ Tert. ins. N. A., 610–611. *Pl.* 3, *fig.* 23.

6237. Pimpla senecta. (Ichneumonidæ.)

Locality: Quesnel, British Columbia. Horizon: ———.

1877. Scudder. Rep. geol. surv. Can., 1875–'76: 268–269.
1877. “ Ins. tert. Quesnel, 3–4.
1877. “ Rapp. opér. comm. géol. Can., 1875–'76: 297.
1890. “ Tert. ins. N. A., 611–612. *Pl.* 3, *figs.* 29–31.

6238. Pimpla succini. (Ichneumonidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1856. Giebel. Insect. d. vorwelt, 155.

6239. Plagiolepis klinsmanni. (Formicidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1868. Mayr. Ameis. balt. bernst., 37–38. *Pl.* 1, *figs.* 19, 20.

6240. Plagiolepis künowi. (Formicidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1868. Mayr. Ameis. balt. bernst., 39. *Pl.* 1, *figs.* 22–23.

6241. Plagiolepis singularis. (Formicidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1868. Mayr. Ameis. balt. bernst., 38–39.

6242. Plagiolepis solitaria. (Formicidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1868. Mayr. Ameis. balt. bernst., 40–41.

6243. Plagiolepis squamifera. (Formicidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1868. Mayr. Ameis. balt. bernst., 40. *Pl.* 1, *fig.* 24.

6244. Polistes ———. (Vespidæ.)

Locality: Chaumerac, France. Horizon: ———.

1815. Latreille. Faujas, Mém. mus. hist. nat., ii: 457. *Pl.* 15, *fig.* 4.

6245. Polistes ———. (Vespidæ.)

Locality: Florissant, Colo. Horizon: Oligocene.

1881. Scudder. Bull. U. S. geol. surv. terr., vi: 290.
1883. " Ann. rep. U. S. geol. surv. terr., xii: 280.

6246. Polistes ———. (Vespidæ.)

Compared with Vespa gallica.

Locality: Aix, France. Horizon: Ligurian.

1829. Serres. Géogn. terrains tert., 229.

6247. Polistes ———. (Vespidæ.)

Compared with P. morio.

Locality: Aix, France. Horizon: Ligurian.

1829. Serres. Géogn. terrains tert., 230.

6248. Polistes primitiva. (Vespidæ.)

Locality: Oeningen, Baden. Horizon: Tortonian.

1865. Heer. Urwelt der Schweiz, 387.
1872. " Monde prim. Suisse, 473.
1876. " Prim. world Switz., ii: 43.
1879. " Urwelt der Schweiz, 2e aufl., 412.

6249. Polyrhachis ———. (Formicidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1868. Smith. Quart. journ. sc., v: 184. *Pl.*, *fig.* 4.

6250. Pompilus ———. (Pompilidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1886. Brischke. Schrift. naturf. gesellsch. Danzig, n. f., vi, iii: 278.
1886. " Hym. bernst., 1.

6251. Pompilus induratus. (Pompilidæ.)

Locality: Oeningen, Baden. Horizon: Tortonian.

1849. Heer. Insektenf. tertiärg. Oeningen, ii: 165–166. *Pl.* 13, *fig.* 10.
1852. Giebel. Deutschl. petref., 647.
1856. " Insect. d. vorwelt, 159.
1885. Scudder. Zittel, Handb. palaeont., i, th. ii: 819. *Fig.* 1106.
1886. " Zittel-Barrois, Traité de paléont., ii: 821. *Fig.* 1123.

6252. Ponera affinis. (Formicidæ.)

Localities: Radoboj, Croatia; Oeningen, Baden. Horizons: Mayencian, Tortonian.
1849. Heer. Insektenf. tertiärg. Oeningen, ii: 147–148. *Pl.* 12, *fig.* 2.
1852. Giebel. Deutschl. petref., 646.
1856. " Insect. d. vorwelt, 174.
1865. Heer. Urwelt der Schweiz, 388.
1872. " Monde prim. Suisse, 475.
1876. " Prim. world Switz., ii: 45.
See also Poneropsis affinis.

Ponera anthracina. See Hypoclinea anthracina.

6253. Ponera atavia. (Formicidæ.)

Locality: Prussian amber. Horizon: Ligurian.
1868. Mayr. Ameis. balt. bernst., 72. *Pl.* 4, *figs.* 66–69.

6254. Ponera crassinervis. (Formicidæ.)

Locality: Parschlug, Styria. Horizon: Tortonian.
1849. Heer. Insektenf. tertiärg. Oeningen, ii: 150 (crassi-nervis). *Pl.* 12, *fig.* 6.
1852. Giebel. Deutschl. petref., 646.
1856. " Insect. d. vorwelt, 175.

6255. Ponera croatica. (Formicidæ.)

Locality: Radoboj, Croatia. Horizon: Mayencian.
1849. Heer. Insektenf. tertiärg. Oeningen, ii: 148. *Pl.* 12, *fig.* 3.
1852. Giebel. Deutschl. petref., 646.
1856. " Insect. d. vorwelt, 174–175.
1867. Mayr. Jahrb. k.-k. geol. reichsanst., xvii: 57.
1867. " Stud. Rad. form., 11.

6256. Ponera elongatula. (Formicidæ.)

Localities: Radoboj, Croatia; Oeningen, Baden. Horizons: Mayencian, Tortonian.
1849. Heer. Insektenf. tertiärg. Oeningen, ii: 150–151. *Pl.* 12, *fig.* 7.
1852. Giebel. Deutschl. petref., 646.
1856. " Insect. d. vorwelt, 175.
1865. Heer. Urwelt der Schweiz, 388.
1867. Mayr. Jahrb. k.-k. geol. reichsanst., xvii: 57.
1867. " Stud. Rad. form., 11 (does not belong to Ponera).
1872. Heer. Monde prim. Suisse, 475 (elongatulus).
1876. " Prim. world Switz., ii: 45.
See also Poneropsis elongatula.

6257. Ponera fuliginosa. (Formicidæ.)

Localities: Oeningen, Baden; Radoboj, Croatia. Horizons: Tortonian, Mayencian.
1849. Heer. Insektenf. tertiärg. Oeningen, ii: 145–147. *Pl.* 12, *fig.* 1.
1852. Giebel. Deutschl. petref., 646.
1856. " Insect. d. vorwelt, 174.
1865. Heer. Urwelt der Schweiz, 388.
1872. " Monde prim. Suisse, 475 (fuliginosus).
1876. " Prim. world Switz., ii: 45.
See also Ponera fuliginosa oeningensis, P f. radobojana, Aphænogaster fuliginosa, Poneropsis fuliginosa.

6258. Ponera fuliginosa oeningensis. (Formicidæ.)

Locality: Oeningen, Baden. Horizon: Tortonian.

1849. Heer. Insektenf. tertiärg. Oeningen, ii: 145–146. *Pl.* 12, *figs* 1*ab*.
See also Ponera fuliginosa, etc.

Ponera fuliginosa radoboj. See Ponera fuliginosa radobojana.

6259. Ponera fuliginosa radobojana. (Formicidæ.)

Locality: Radoboj, Croatia. Horizon: Mayencian.

1849. Heer. Insektenf. tertiärg. Oeningen, ii: 146–147 (radoboj). *Pl.* 12, *figs.* 1*cd*.
See also Ponera fuliginosa, etc.

6260. Ponera globosa. (Formicidæ.)

Locality: Oeningen, Baden. Horizon: Tortonian.

1849. Heer. Insektenf. tertiärg. Oeningen, ii: 151–153. *Pl.* 12, *fig.* 9.
1852. Giebel. Deutschl. petref., 646.
1856. " Insect. d. vorwelt, 176.

6261. Ponera gracilicornis. (Formicidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1868. Mayr. Ameis. balt. bernst., 72–73.

Ponera livida. See Aphænogaster livida.

6262. Ponera longæva. (Formicidæ.)

Locality: Oeningen, Baden. Horizon: Tortonian.

1849. Heer. Insektenf. tertiärg. Oeningen, ii: 148–149. *Pl.* 12, *fig.* 5.
1852. Giebel. Deutschl. petref., 646.
1856. " Insect. d. vorwelt, 175.

Ponera lugubris. See Poneropsis lugubris.

Ponera morio. See Poneropsis morio.

6263. Ponera nitida. (Formicidæ.)

Locality: Radoboj, Croatia. Horizon: Mayencian.

1849. Heer. Insektenf. tertiärg. Oeningen, ii: 149–150. *Pl.* 12, *fig.* 4.
1852. Giebel. Deutschl. petref., 646.
1856. " Insect. d. vorwelt, 175.
See also Poneropsis nitida, Hypoclinea nitida.

Ponera oeningensis. See Ponera fuliginosa oeningensis.

Ponera radobojana. See Ponera fuliginosa radobojana.

6264. Ponera succinea. (Formicidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1868. Mayr. Ameis. balt. bernst., 72.

6265. Ponera tenuis. (Formicidæ.)

Locality: Radoboj, Croatia. Horizon: Mayencian.

1867. Mayr. Jahrb. k.-k. geol. reichsanst., xvii: 57–58.
1867. " Stud. Rad. form., 11–12.
See also Poneropsis tenuis.

6266. Ponera veneraria. (Formicidæ.)

Locality: Oeningen, Baden. Horizon: Tortonian.

1865.	Heer.	Urwelt der Schweiz, 359, 388. *Figs.* 288*ab* on *p.* 386.
1872.	"	Monde prim. Suisse, 441, 475 (venerarius). *Figs.* 288*ab* on *p.* 474.
1876.	"	Prim. world Switz., ii: 14, 45. *Figs.* 288*ab* on *p.* 44.
1879.	"	Urwelt der Schweiz, 2ᵉ aufl., 385. *Fig.* 330 on *p.* 412.

See also Poneropsis veneraria.

6267. Ponera ventrosa. (Formicidæ.)

Locality: Oeningen, Baden. Horizon: Tortonian.

1849.	Heer.	Insektenf. tertiärg. Oeningen, ii: 151. *Pl.* 12, *fig.* 8.
1852.	Giebel.	Deutschl. petref., 646.
1856.	"	Insect. d. vorwelt, 175.

6268. Poneropsis affinis. (Formicidæ.)

Localities: Radoboj, Croatia; Oeningen, Baden. Horizons: Mayencian, Tortonian.

1867.	Heer.	Neue denkschr. schweiz. gesellsch., xxii, mem. 4: 19.
1867.	"	Foss. hymen., 19.
1879.	"	Urwelt der Schweiz, 2ᵉ aufl., 413.

See also Ponera affinis.

6269. Poneropsis anthracina. (Formicidæ.)

Locality: Radoboj, Croatia. Horizon: Mayencian.

1867.	Heer.	Neue denkschr. schweiz. gesellsch., xxii, mem. 4: 22. *Pl.* 2, *figs.* 8, 8*b*.
1867.	"	Foss. hymen., 22. *Pl.* 2, *figs.* 8, 8*b*.

See also Hypoclinea anthracina.

6270. Poneropsis brunascens. (Formicidæ.)

Locality: ———. Horizon: ———.

1867.	Heer.	Neue denkschr. schweiz. gesellsch., xxii, mem. 4: 27 (compared with Poneropsis globosa, undescr.). *Pl.* 2, *figs.* 7, 7*bc*.
1867.	"	Foss. hymen., 27. *Pl.* 2, *figs.* 7, 7*bc*.

6271. Poneropsis elongata. (Formicidæ.)

Locality: Radoboj, Croatia. Horizon: Mayencian.

1867.	Heer.	Neue denkschr. schweiz. gesellsch., xxii, mem. 4: 19–20. *Pl.* 1, *fig.* 21.
1867.	"	Foss. hymen., 19–20. *Pl.* 1, *fig.* 21.

6272. Poneropsis elongatula. (Formicidæ.)

Localities: Radoboj, Croatia; Oeningen, Baden. Horizons: Mayencian, Tortonian.

1867.	Heer.	Neue denkschr. schweiz. gesellsch., xxii, mem. 4: 22.
1867.	"	Foss. hymen., 22.
1879.	"	Urwelt der Schweiz, 2ᵉ aufl., 413.

See also Ponera elongatula.

6273. Poneropsis escheri. (Formicidæ.)

Locality: Oeningen, Baden. Horizon: Tortonian.

1867.	Heer.	Neue denkschr. schweiz. gesellsch., xxii, mem. 4: 20. *Pl.* 1, *figs.* 22, 22*bc*.
1867.	"	Foss. hymen., 20. *Pl.* 1, *figs.* 22, 22*bc*.

6274. Poneropsis fuliginosa. (Formicidæ.)

Localities: Radoboj, Croatia; Oeningen, Baden. **Horizons:** Mayencian, Tortonian.

1867. Heer. Neue denkschr. schweiz. gesellsch., xxii, mem. 4: 19.
1867. " Foss. hymen., 19.
1879. " Urwelt der Schweiz, 2^e aufl., 413.

See also Ponera fuliginosa, etc.

Poneropsis globosa. See Poneropsis brunascens.

6275. Poneropsis imhoffii. (Formicidæ.)

Locality: Radoboj, Croatia. **Horizon:** Mayencian.

1867. Heer. Neue denkschr. schweiz. gesellsch., xxii, mem. 4: 24. *Pl.* 2, *figs.* 3*ab*.
1867. " Foss. hymen., 24. *Pl.* 2, *figs.* 3*ab*.

See also Liometopum imhoffii, etc.

6276. Poneropsis livida. (Formicidæ.)

Locality: Radoboj, Croatia. **Horizon:** Mayencian.

1867. Heer. Neue denkschr. schweiz. gesellsch., xxii, mem. 4: 25–26. *Pl.* 2, *figs.* 5, 5*b*.
1867. " Foss. hymen., 25–26. *Pl.* 2, *figs.* 5, 5*b*.

See also Aphænogaster livida.

6277. Poneropsis lugubris. (Formicidæ.)

Locality: Radoboj, Croatia. **Horizon:** Mayencian.

1867. Heer. Neue denkschr. schweiz. gesellsch., xxii, mem. 4: 21. *Pl.* 1, *figs.* 23, 23*bcd*.
1867. " Foss. hymen., 21. *Pl.* 1, *figs.* 23, 23*bcd*.
1867. Mayr. Jahrb. k.-k. geol. reichsanst., xvii: 57.
1867. " Stud. Rad. form., 11 (quotes Heer's species as "Ponera" lugubris, and says it belongs to Formicinæ).

See also Aphænogaster lugubris, Poneropsis lugubris minor.

6278. Poneropsis lugubris minor. (Formicidæ.)

Locality: Radoboj, Croatia. **Horizon:** Mayencian.

1867. Heer. Neue denkschr. schweiz. gesellsch., xxii, mem. 4: 21.
1867. " Foss. hymen., 21.

See also Poneropsis lugubris, etc.

Poneropsis minor. See Poneropsis lugubris minor.

6279. Poneropsis morio. (Formicidæ.)

Locality: Radoboj, Croatia. **Horizon:** Mayencian.

1867. Heer. Neue denkschr. schweiz. gesellsch., xxii, mem. 4: 26. *Pl.* 2, *figs.* 6, 6*b*.
1867. " Foss. hymen., 26.
1867. Mayr. Jahrb. k.-k. geol. reichsanst., xvii: 57.
1867. " Stud. Rad. form., 11, (quotes Heer's species as "Ponera" morio and says it is one of the Formicinæ).

See also Poneropsis morio pallens.

6280. Poneropsis morio pallens. (Formicidæ.)

Locality: Radoboj, Croatia. Horizon: Mayencian.

1867. Heer. Neue denkschr. schweiz. gesellsch., xxii, mem. 4: 26–27. *Pl.* 2, *fig.* 6c.
1867. " Foss. hymen., 26–27. *Pl.* 2, *fig.* 6c.
See also Poneropsis morio.

6281. Poneropsis nitida. (Formicidæ.)

Locality: Radoboj, Croatia. Horizon: Mayencian.

1867. Heer. Neue denkschr. schweiz. gesellsch., xxii, mem. 4: 20.
1867. " Foss. hymen., 20.
See also Ponera nitida, etc.

Poneropsis pallens. See Poneropsis morio pallens.

6282. Poneropsis pallida. (Formicidæ.)

Locality: Radoboj, Croatia. Horizon: Mayencian.

1867. Heer. Neue denkschr. schweiz. gesellsch., xxii, mem. 4: 23–24. *Pl.* 2, *figs.* 2, 2*b*.
1867. " Foss. hymen., 23–24. *Pl.* 2, *figs.* 2, 2*b*.

6283. Poneropsis schmidtii. (Formicidæ.)

Locality: Radoboj, Croatia. Horizon: Mayencian.

1867. Heer. Neue denkschr. schweiz. gesellsch., xxii, mem. 4: 24–25. *Pl.* 2, *figs.* 4, 4*b*.
1867. " Foss. hymen., 24–25. *Pl.* 2, *figs.* 4, 4*b*.
See also Liometopum imhoffii, etc.

6284. Poneropsis stygia. (Formicidæ.)

Locality: Oeningen, Baden. Horizon: Tortonian.

1867. Heer. Neue denkschr. schweiz. gesellsch., xxii, mem. 4: 27–28. *Pl.* 1, *figs.* 20, 20*b*.
1867. " Foss. hymen., 27–28. *Pl.* 1, *figs.* 20, 20*b*.

6285. Poneropsis tenuis. (Formicidæ.)

Locality: Radoboj, Croatia. Horizon: Mayencian.

1867. Heer. Neue denkschr. schweiz. gesellsch., xxii, mem. 4: 22–23. *Pl.* 2, *figs.* 1, 1*b*.
1867. " Foss. hymen., 22–23. *Pl.* 2, *figs.* 1, 1*b*.
See also Ponera tenuis.

6286. Poneropsis veneraria. (Formicidæ.)

Locality: Oeningen, Baden. Horizon: Tortonian.

1879. Heer. Urwelt der Schweiz, 2^{e} aufl., 413. *Figs.* 330*ab* on *p.* 412.
See also Ponera veneraria.

6287. Porizon ———. (Ichneumonidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1886. Brischke. Schrift. naturf. gesellsch. Danzig, n. f., vi, iii: 279.
1886. " Hym. bernst., 2.

6288. Prenolepis henschei. (Formicidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1868. Mayr. Ameis. balt. bernst., 34–35. *Pl.* 1, *figs.* 14–17.

6289. Prenolepis pygmæa. (Formicidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1868. Mayr. Ameis. balt. bernst., 36. *Pl.* 1, *fig.* 18.

6290. Priocnemis ———. (Pompilidæ.)

Locality: Oeningen, Baden. Horizon: Tortonian.

1888. Schöberlin. Soc. entom., iii: 61.

6291. Prionomyrmex longiceps. (Formicidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1868. Mayr. Ameis. balt. bernst., 78. *Pl.* 4, *figs.* 74–75.
1885. Scudder. Zittel, Handb. palaeont., i, th. ii: 817. *Fig.* 1103.
1886. " Zittel-Barrois, Traité de paléont., ii: 820. *Fig.* 1121.

6292. Psen (or Mimesa) ———. (Crabronidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1886. Brischke. Schrift. naturf. gesellsch. Danzig, n. f., vi, iii: 278.
1886. " Hymn. bernst., 1.

6293. Pseudomyrme ———. (Formicidæ.)

Locality: Sicilian amber. Horizon: ———.

1886. Scudder. Zittel-Barrois, Traité de paléont., ii: 820.
1886. " Bull. U. S. geol. surv., No. 31: 100.
See also Leptalea ——— Erichson, Formica ——— Guérin, i: 9, 10.

6294. Psilus ———. (Proctotrupidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1835. Gravenhorst. Uebers. schles. gesellsch. vaterl. cult., 1834: 92.

6295. Pteromalinites œningensis. (Pteromalidæ.)

Locality: Oeningen, Baden. Horizon: Tortonian.

1865. Heer. Urwelt der Schweiz, 388.
1872. " Monde prim. Suisse, 476.
1876. " Prim. world Switz., ii: 46.
1879. " Urwelt der Schweiz, 2e aufl., 414.

6296. Pteromalus? ———. (Pteromalidæ.)

Locality: Salzhausen, Germany. Horizon: Miocene.

1865. Heyd.-Heyd. Palaeontogr., xiv: 35 (or Cynips?).
See also Cynips ——— Heyden.

6297. Pteromus ———. (Tenthredinidæ.)

Locality: Aix, France. Horizon: Ligurian.

1829. Serres. Géogn. terrains tert., 229.

6298. Rhopalomyrmex pygmæus. (Formicidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1868. Mayr. Ameis. balt. bernst., 42. *Pl.* 2, *figs.* 25–26.

Rhyssa antiqua. See Pimpla (Rhyssa) antiqua.

6299. Rhysssa juvenis. (Ichneumonidæ.)

Locality: Green River, Wyo. Horizon: Oligocene.

1890. Scudder. Tert. ins. N. A., 609–610. *Pl.* 10, *figs.* 19.

6300. Sapyja ——. (Mutillidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1886. Brischke. Schrift. naturf. gesellsch. Danzig, n. f., vi, iii: 278.
1886. " Hym. bernst., 1.

6301. Scolia ——. (Scoliadæ.)

Locality: Florissant, Colo. Horizon: Oligocene.

1881. Scudder. Bull. U. S. geol. surv. terr., vi: 290.
1883. " Ann. rep. U. S. geol. surv. terr., xii: 280.

6302. Scolia saussureana. (Scoliadæ.)

Locality: Oeningen, Baden. Horizon: Tortonian.

1865. Heer. Urwelt der Schweiz. *Fig.* 297 on *p.* 386.
1872. " Monde prim Suisse. *Fig.* 297 on *p.* 474.
1876. " Prim. world Switz., ii. *Fig.* 297 on *p.* 44.
1879. " Urwelt der Schweiz, 2^{e} aufl. *Fig.* 339 on *p.* 412.
1885. Scudder. Zittel, Handb. palaeont., i, th. ii: 818. *Fig.* 1105.
1886. " Zittel-Barrois, Traité de paléont., ii: 821. *Fig.* 1122.

6303. Selandria ——. (Tenthredinidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1886. Brischke. Schrift. naturf. gesellsch. Danzig, n. f., vi, iii: 279.
1886. " Hym. bernst., 2.

Selandria ——. See Tenthredo —— Curtis.

6304. Sima angustata. (Formicidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1868. Mayr. Ameis. balt. bernst., 102. *Pl.* 5, *fig.* 106.

6305. Sima ocellata. (Formicidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1868. Mayr. Ameis. balt. bernst., 101–102. *Pl.* 5, *figs.* 104–105.

6306. Sima simplex. (Formicidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1868. Mayr. Ameis. balt. bernst., 102.

6307. Solenopsis ? venusta. (Formicidæ.)

Locality: Radoboj, Croatia. Horizon: Mayencian.

1867. Mayr. Jahrb. k.-k. geol. reichsanst., xvii: 60.
1867. " Stud. Rad. form., 14.

See also Myrmica venusta.

6308. Sphex ———. (Sphegidæ.)

Locality: ———. Horizon: ———.

1846. Giebel. Paläozool., 280.

6309. Sphex ———. (Sphegidæ.)

Locality: Oeningen, Baden. Horizon: Tortonian.

1888. Schöberlin. Soc. entom., iii: 61.

6310. Sphex gigantea. (Sphegidæ.)

Locality: Radoboj, Croatia. Horizon: Mayencian.

1867. Heer. Neue denkschr. schweiz. gesellsch., xxii, mem. 4: 33–34. *Pl.* 3, *figs.* 4, 5, 5*b*.
1867. " Foss. hymen., 33–34. *Pl.* 3, *figs.* 4, 5, 5*b*.
1885. Scudder. Zittel, Handb. palaeont., i, th. ii: 819. *Fig.* 1107.
1886. " Zittel-Barrois, Traité de paléont., ii: 821. *Fig.* 1124.

6311. Stigmomyrmex robustus. (Formicidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1868. Mayr. Ameis. balt. bernst., 97–98. *Pl.* 5, *fig.* 101.
1885. Scudder. Zittel, Handb. palaeont., i, th. ii: 817. *Fig.* 1102.
1886. " Zittel-Barrois, Traité de paléont., ii: 820. *Fig.* 1119.

6312. Stigmomyrmex venustus. (Formicidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1868. Mayr. Ameis. balt. bernst., 97. *Pl.* 5, *figs.* 99–100.

6313. Tapinoma? ———. (Formicidæ.)

Locality: Sicilian amber. Horizon: ———.

1881. Malfatti. Atti accad. linc., (3), trans., v: 82–83. *Fig.* 2.

6314. Taxonus nortoni. (Tenthredinidæ.)

Locality: Green River, Wyo. Horizon: Oligocene.

1890. Scudder. Tert. ins. N. A., 604. *Pl.* 10, *figs.* 26, 27.

6315. Tenthredo ———. (Tenthredinidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1886. Brischke. Schrift. naturf. gesellsch. Danzig, n. f., vi, iii: 279.
1886. " Hym. bernst., 2.

6316. Tenthredo ———. (Tenthredinidæ.)

Compared with Selandria fuliginosa.

Locality: Aix, France. Horizon: Ligurian.

1829. Curtis. Edinb. new. phil. journ., vii: 295.
1829. " Murchison-Lyell, Tert. form. Aix, 11.

6317. Tenthredo ———. (Tenthredinidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1835. Gravenhorst. Uebers. schles. gesellsch. vaterl. cult., 1834: 92.

6318. Tenthredo ——. (Tenthredinidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1829. Schlotheim. Petrefactenk., 43.

6319. Tenthredo —— (2 sp.). (Tenthredinidæ.)

Locality: Oeningen, Baden. Horizon: Tortonian.

1888. Schöberlin. Soc. entom., iii: 61.

6320. Tenthredo ——. (Tenthredinidæ.)

Compared with T. viridis.

Locality: Aix, France. Horizon: Ligurian.

1829. **Serres.** Géogn. terrains tert., 229 (Thenthredo).

6321. Tenthredo gervaisi. (Tenthredinidæ.)

Locality: Aix, France. Horizon: Ligurian.

1861. Heer. Saporta, Heer, Rech. climat pays tert., 153 (undescr.).

6322. Tenthredo vetusta. (Tenthredinidæ.)

Locality: Oeningen, Baden. Horizon: Tortonian.

1849. Heer. Insektenf. tertiärg. Oeningen, ii: 172–173. *Pl.* 13, *fig.* 16.
1852. Giebel. Deutschl. petref., 647.
1856. " Insect. d. vorwelt, 152.

Thenthredo ——. See Tenthredo —— **Serres.**

6323. Torymus ——. (Chalcididæ.)

Locality: Brunstatt, Alsatia. Horizon: Middle Oligocene.

1890. Foerster. In litt.

6324. Trigona? ——. (Apidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1832. Burmeister. Handb. ent., i: 636.
1836. " Man. ent., 577.

Trogus fusiformis. See Ichneumonites (Trogus) **fusiformis.**

6325. Tryphon ——. (Ichneumonidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1886. Brischke. Schrift. naturf. gesellsch. Danzig, n. f., vi, iii: 278.
1886. " Hym. bernst., 1.

6326. Typhia? ——. (Mutillidæ.)

Locality: Prussian amber. Horizon: Ligurian.

1886. Brischke. Schrift. naturf. gesellsch. Danzig, n. f., vi, iii: 278.
1886. " Hym. bernst., 1.

6327. Urocerites spectabilis. (Uroceridæ.)

Locality: Radoboj, Croatia. Horizon: Mayencian.

1867. Heer. Neue denkschr. schweiz. gesellsch., xxii, mem. 4: 38–39. *Pl.* 3, *figs.* 1, 2, 2*b*, 3.
1867. " Foss. hymen., 38–39. *Pl.* 3, *figs.* 1, 2, 2*b*, 3.
1885. Scudder. Zittel, Handb. palaeont., i, th. ii: 816. *Fig.* 1097.
1886. " Zittel-Barrois, Traité de paléont., ii: 818. *Fig.* 1114.

6328. Vespa ——. (Vespidæ.)

Locality: Prussian amber. **Horizon:** Ligurian.

1835.	Gravenhorst.	Uebers. schles. gesellsch. vaterl. cult., 1834: 92.

6329. Vespa ——. (Vespidæ.)

Locality: Aix, France. **Horizon:** Ligurian.

1847.	Hope.	Trans. ent. soc. Lond., iv: 252.

6330. Vespa ——. (Vespidæ.)

Locality: Oeningen, Baden. **Horizon:** Tortonian.

1888.	Schöberlin.	Soc. entom., iii: 61.

6331. Vespa atavina. (Vespidæ.)

Localities: Parschlug, Styria; Moudon, Switzerland. **Horizon:** Tortonian.

1849.	Heer.	Insektenf. tertiärg. Oeningen, ii: 101 (attavina). *Pl.* 7, *fig.* 8.
1852.	Giebel.	Deutschl. petref., 645 (attavina).
1856.	"	Insect. d. vorwelt, 160 (attavina).
1865.	Heer.	Urwelt der Schweiz, 387. *Fig.* 289 on *p.* 386.
1872.	"	Monde prim. Suisse, 473. *Fig.* 289 on *p.* 474.
1876.	"	Prim. world Switz., ii: 44. *Fig.* 289.
1879.	"	Urwelt der Schweiz, 2^{e} aufl., 412. *Fig.* 331.

Vespa attavina. See Vespa atavina.

6332. Vespa crabroniformis. (Vespidæ.)

Locality: Radoboj, Croatia. **Horizon:** Mayencian.

1867.	Heer.	Neue denkschr. schweiz. gesellsch., xxii, mem. 4: 6. *Pl.* 3, *fig.* 15*a*.
1867.	"	Foss. hymen., 6. *Pl.* 3, *fig.* 15*a*.
1885.	Scudder.	Zittel, Handb. palaeont., i, th. ii: 819. *Fig.* 1108.
1886.	"	Zittel-Barrois, Traité de paléont., ii: 821. *Fig.* 1125.

6333. Vespa dasypodia. (Vespidæ.)

Locality: Prussian amber. **Horizon:** Ligurian.

1856.	Menge.	Progr. petrischule Danzig, 1856: 26.

6334. Xylocopa senilis. (Apidæ.)

Locality: Oeningen, Baden. **Horizon:** Tortonian.

1849.	Heer.	Insektenf. tertiärg. Oeningen, ii: 93–95. *Pl.* 7, *figs.* 1.
1852.	Giebel.	Deutschl. petref., 645.
1856.	"	Insect. d. vorwelt, 181–182.
1865.	Heer.	Urwelt der Schweiz, 386. *Fig.* 295.
1872.	"	Monde prim. Suisse, 473. *Fig.* 295 on *p.* 474.
1876.	"	Prim. world Switz., ii: 43. *Fig.* 295 on *p.* 44.
1879.	"	Urwelt der Schweiz, 2^{e} aufl., 411. *Fig.* 337 on *p.* 412.
1885.	Scudder.	Zittel, Handb. palaeont., i, th. ii: 819. *Fig.* 1109.
1886.	"	Zittel-Barrois, Traité de paléont., ii: 821. *Fig.* 1126.

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